





Update

Reflections on 50 Years at NIH

An Interview with Margaret Pittman

By Dr. Victoria A. Harden

It was 1936, and President Franklin D. Roosevelt was fighting to bring the country out of the Great Depression with his "New Deal" policies. One of his most important legislative accomplishments was the Social Security Act, which provided a sizable appropriation for public health, including funds to expand medical research at the National Institute of Health, then located at 25th and E Streets, N.W., in Washington, D.C. Among the young investigators hired at NIH with Social Security funds was Margaret Pittman, a talented young woman who spent her entire career in biologics research and who, in 1958, became the first woman to be named chief of an NIH laboratory.

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Dr. Margaret Pittman (left) and co-worker in a laboratory of the Division of Biologics Control during the 1930's

The Year in Review—NIH in 1988

By Dr. James B. Wyngaarden

"If you know the enemy and know yourself, you need not fear the result of a hundred battles." Man will soon know himself and his enemies—genetic diseases—in ways unimaginable 2,500 years ago when a Chinese philosopher-general gave us this advice or even 35 years ago when Drs. James Watson and Francis Crick determined DNA's structure. We now stand on the threshold of knowing the entire human genome—the location of all the genes and the order of the 3.5 billion base pairs.

It is appropriate that NIH play the lead role in the project to map and sequence the human genome. America's preeminence in molecular genetics is primarily the result of NIH's investment in basic biomedical research over the past several decades.

To oversee the genome project, I have appointed one of the fathers of molecular genetics, Dr. Watson, to be NIH associate director for human genome research. This is a part-time position for him; he continues to direct the Cold Spring Harbor Laboratory on Long Island. He will be guided in setting research goals by the new NIH Program Advisory Committee on the Human Genome. NIH's effort will be coordinated with other agencies, industry, and national and international scientific organizations.

Dr. Watson's first objective is to lay out a sensible plan for the project to be done as quickly and economically as possible. Large-scale sequencing should not move ahead until technology has improved so that the sequencing cost can be reduced; it is estimated that the cost could drop by a factor of 10 from its present price of \$1 a base. Important genes certainly will be

sequenced as they are found. NIH's FY 1989 budget earmarks about \$35 million for the genome project. This figure is expected to increase to about \$200 million per year during the anticipated 15 years of the project.



Dr. James B. Wyngaarden, NIH director

The genome project must include both public education and training of young researchers. There are insufficient trained people in the United States to do the rapidly expanding molecular biology at hand. Over the past decade, the number of new Ph.D.'s in the life sciences grew by the lowest amount in 30 years—less than 10 percent—while new master's and bachelor's degrees actually decreased.

As part of NIH's efforts to reverse this trend, we established several new biotechnology research training activities, including a post-doctoral program at NIH and a predoctoral one at universities.

We must also teach the average citizen what DNA is so he or she can appreciate the enormous benefits to be reaped from the genome project. It should have a profound impact on diagnosis and treatment

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Welcome to the NIHAA

With the publication of our first newsletter, we welcome you to the NIH Alumni Association. Our membership in the Washington metropolitan area already totals 400. Many of you attended our first social and educational programs this past spring and fall. We are about to begin a nationwide membership drive with the expectation of establishing local chapters throughout the country and, eventually, overseas (there are already alumni groups in Japan, Taiwan and India). A board of directors has been selected to guide us through the developmental stages of this organization. We believe that the establishment of the NIHAA will greatly enhance the ability of NIH alumni to maintain ties with the NIH, enable the alumni to stay in touch with current scientific events, and facilitate contacts with old friends and colleagues. In addition, we believe that the NIHAA can serve a useful role in bringing talented young scientists to the attention of the NIH intramural program and explaining important scientific issues to the public.

You will learn more about

our plans for the Alumni Association in forthcoming issues of the *NIHAA Update*. We welcome your help in planning the future course of the NIHAA.

We are especially grateful to the Foundation for Advanced Education in the Sciences (FAES) and NIH Centennial Committee for their financial assistance and support in establishing the NIHAA.

Abner Notkins
Chairman, NIHAA
Organizing Committee

Leon Jacobs & Cal Baldwin
Co-Chairmen, Local
Organizational Committee

NIHAA Update Editorial Policy

NIHAA Update is not really a new newsletter. Rather it is the successor to an alumni publication whose title was simply "Newsletter." That publication appeared sporadically during the years 1977-1982. Published some 13 times in that period under the auspices of the Foundation for Advanced Education in the Sciences, the old newsletter included several editorial categories that will persist in the new version.

Update's goal is to maintain a link between NIH and its sons and daughters that emphasizes the pride and good feeling that many have shared in careers here. Not quite so informal as a letter from home, *Update* will nonetheless strive to preserve a sense of community between those who remain at NIH and those who have gone elsewhere.

We intend to retain the columns that included NIH staff and alumni appointments and personnel changes, retirements, deaths and awards/honors. As before, we will rely on alumni to notify us of all major career changes, new positions and titles, major publications, awards and honors received and other occurrences of interest to alumni. This material will be arranged according to the decade(s) corresponding to the submitter's tenure at NIH and will be subject to editing.

Each issue will include a major feature story either written expressly for *Update* or chosen from the best of our employee newsletter, *The NIH Record*. We plan to solicit articles on topics of our choosing from among the alumni and senior scientists and administrators on campus who care to write for *Update*.

Also included will be a column on administrative news and policy at NIH, a retrospective look at what was happening here 10, 20, 30 and 40 years ago, a calendar of major

Update

The NIHAA Update, published Spring and Fall 1989, is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

Editor: Harriet R. Greenwald

Editor's Note

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their col-

leagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit material.

NIH events, and a clip-out coupon that will allow alumni to join the NIHAA or send in material for the next *Update*. All bureaus, institutes and divisions at NIH have been invited to contribute to the editorial mix.

We plan one more issue of *Update* in 1989, scheduled to appear in the fall. In 1990 we expect to publish the newsletter quarterly. Queries and news items may be submitted to *Update* editor Harriet Greenwald (who is also executive director of NIHAA), 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

Welcome back to NIH!

Museum of Medical Research Opens

In 1987, as a part of the NIH centennial, Director James B. Wyngaarden established the DeWitt Stetten, Jr. Museum of Medical Research. Its mission is to collect and exhibit significant biomedical research instruments and artifacts relating to NIH history. Several

exhibits are currently on display in the lobby of the Clinical Center (Bldg. 10), including one entitled "Breaking the Genetic Code" on the work of NIH's first Nobel laureate, Marshall W. Nirenberg. Alumni who would like additional information or who are interested in volunteer work with the museum should contact Dr. Victoria A. Harden, curator, Building 60, Room 152, National Institutes of Health, Bethesda, MD 20892; (301) 496-6610.

NIH License Plates at R&W

NIH employees as well as alumni are eligible to purchase special Maryland license plates with the initials "NIH" followed by four numbers, at the R&W. Cost is \$8 for R&W members.

For more information about obtaining the NIH plate contact the R&W Activities Desk, Bldg. 31, Rm. B1W30, (301) 496-4000.

MI Grads Excel

Intern Program Offers Avenue to Top

By Rich McManus

There are at least two ways to be successful in an NIH career, depending on the sphere to which you belong—the scientific or the administrative.

In the first world, success is measured in terms of significant discoveries, excellent publications and important prizes.

In the latter world, more akin to Main Street than MIT, success is measured more subjectively: How much responsibility can you handle? Are you a good manager? Can you get big jobs done?

With astonishing regularity at NIH, the people who have risen to top administrative positions have shared a set of key initials—MI.

Unlike M.D., Ph.D. or M.A., these initials are not academic hieroglyphs heralding scholarly achievement; they stand rather for Management Intern, a year-long program that, since its inception on this campus in 1956, has launched the careers of many an executive officer, budget officer and division chief.

This story is a look at one individual whose life and career were dramatically improved by her passage through the MI year.

Anne Houser has called her MI year of 1977 a "golden year." If that is true, the six years of federal service preceding her acceptance into the program must be described as somewhat leaden.

A native of Bluefield, W.Va., she joined NIH in 1971 as an NHLBI chemist in the Clinical Center. She had majored in chemistry at Salem College in Winston-Salem, N.C.,

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Dr. Lois Salzman, deputy director of NIDR's intramural research program, and Cal Baldwin, former NIH associate director for administration, welcome guests at a NIHAA social event in Bethesda.

and done a year of research at the University of Virginia before arriving in Bethesda. Like many undergraduate scientists who come to NIH each year, she was bright, talented, enthusiastic and headed just a little north of nowhere in her career.

"The lab was not a growth experience," she recalls. "I couldn't feel in control. I couldn't feel special to the effort. Basically, I was just a good pair of hands."

She remembers walking by the NIH Library on the first floor of the CC and seeing her friends busily checking out science journals; Houser used the library to comb the newspaper want ads.

"A colleague of mine who had left the lab told me about the MI program," she remembers. "I called the training office for the application package. In those days there wasn't much publicity about MI."

About 100 people applied that year but only 10 were selected, 5 from inside NIH, 5 from without. Houser was one of the "ins."

"I was ecstatic when I found out," she says. "I can still remember the day they called. It was about the biggest high I ever had."

Then as now, new interns select, with the help of a mentor, four 3-month rotations to complete; they are also expected to wedge in some relevant classes offered by the Training Center and the Civil Service Commission.

Houser's first rotation was in OMAR—the then newly created Office of Medical Applications of Research.

"We put on the first NIH consensus conference ever," she recalls. "It was on screening for breast cancer. It was a really great experience. I learned good work habits and also how to recognize a good administrator when I saw one."



Anne Houser, graduate of NIH's Management Intern Program, has termed her MI experience "a golden year."

Her second tour was with Philip Amoruso, now NCI's executive officer but then an administrative officer in NCI's Division of Cancer Treatment.

"I learned what AO's do," Houser said, "from FOI (freedom of information) requests, moves of various kinds, FTEs (full-time equivalents—a measure of staffing) and budget issues. I also learned that I didn't want to be an AO."

All of the AOs with whom she worked in that rotation are now executive officers, she points out.

Her third rotation, taken in a program planning office, resembled the second in that it taught her the kind of projects that, for her, are best to avoid.

"I didn't like the long-term planning and reporting aspect," she said. "It's not for me to collect loads of information then huddle up in a room for a few weeks to write a report."

Houser's last rotation, in the Division of Legislative Analysis, found her falling in love.

"It was wonderful," she recalls. "I can still remember the first hearing on Capitol Hill that I attended. It was the Labor and Human Resources Committee with Kennedy as chairman. It was an exciting time. Those people are impressive and powerful. They do things that affect us and we know it."

In DLA, Houser found an office where "everything that is important to NIH is important to this office." There was no question that she would seek her first post-MI job in DLA.

"Unfortunately, there were no slots available when I graduated," she remembers. "Then two people suddenly left and I joined DLA as a program analyst."

That was a decade ago. Today she is chief of DLA's Legislative Liaison and Analysis Branch.

"It is not any less exciting today than it was then," she says. "I've been to hundreds of hearings and the excitement of that has waned a bit. But the issues we face are always new."

Houser manages a staff of three, including former MI Rosalind Gray, her AIDS expert. She has been mentor to some half dozen MIs since 1978 and is "always on the lookout for MI grads."

"You really have to want to be in the MI program," she advises. "You have to prove yourself all over again every three months. People remember reputations many years down the line. You meet a lot of people and find out who does what. They get some sense of your competence and what you can do."

Houser says there was a time during her lab years when "I felt there was nothing beyond the laboratory. I had never even seen a memo before—we were not included in the general bureaucratic maze."

Today she declares that EOs and

AOs "make the world run."

Her advice to new MIs is simple: "Make the year count. Pick really good assignments. Meet as many people as you can. Do a good job at everything and realize that people will excuse you if you make mistakes. It's a year that you can't lose in—a golden year."

Scholars-in-Residence Welcomed

Twenty scientists from 12 foreign countries and the United States came to the NIH campus in 1988 as members of the prestigious Fogarty Scholars-in-Residence program. Under the program, outstanding scientists of any country can be invited to interact with the NIH scientific community and conduct studies in contemporary biomedicine and international health.

Scholars-in-Residence in 1988 were:

Drs. Jorge Allende of Chile, Kare Berg of Norway, Maurizio Brunori and Franco Conti of Italy, Bernard Davis of Massachusetts, Ragnar Ekholm and Sture Forsen of Sweden, Robert Fraser of Australia, David Goldfarb of the Soviet Union, Herbert Gutfreund of Great Britain, Konstantin-Alexander Hossman of West Germany, Elwood Jensen of Switzerland and the U.S., Martin Kamen of California, Joseph Martin of Massachusetts, Itzhak Parnas and Abraham Patchornik of Israel, Tetsou Shiba of Japan, Lars Terenius of Sweden, C.L. Tsou of China, and Robert W. Zwanzig of Maryland.

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of the 4,000 currently known single-gene disorders, as well as polygenic ones such as cancer and heart disease.

In 1988 I established another office at NIH, the Office of Invention Development, to facilitate the transfer of technology from NIH laboratories to the private sector for further development and commercialization. This is in accordance with the 1986 Federal Technology Transfer Act, by which Federal scientists are encouraged to enter into Cooperative Research and Development Agreements (CRADA's) with industry to benefit the public health while protecting each organization's primary goals. A company could obtain an exclusive license to a patented invention developed under a CRADA if that company has contributed substantial resources to the project. Federal scientists can receive up to \$100,000 per year as income from such patented, licensed inventions. We have had one forum—and more are planned—at which 250 Federal scientists met with about 250 industry representatives to identify areas of mutual interest that might result in CRADA's.

A new institute, the National Institute on Deafness and Other Communication Disorders, was established by Congress in 1988. Most of NIDCD's FY 1989 funds will come from what is now the National Institute of Neurological Disorders and Stroke, which has heretofore been responsible for hearing and communicative disorder research. NIDCD's purview will include diseases affecting hearing, balance, voice, speech, language, taste, and smell. Until a permanent director is found, I have appointed Dr. Jay Moskowitz as acting director. Meanwhile, he continues his

role as NIH associate director for science policy and legislation.

Use of Animals in Research

NIH believes that the use of animals as experimental models is an integral part of biomedical research. We recognize, however, that several segments of our society need a better understanding of the role of animals in research and of NIH's policies requiring their proper care and use. Thus, we held several briefing sessions last year to inform members of Congress and their staffs about our policies and to stress our expanded support of efforts to develop alternatives to animal models and non-invasive techniques. We plan to repeat these sessions periodically.

NIH researchers recognize both the scientific and ethical responsibility for the humane care and use of animals. The intramural program is making considerable progress toward gaining accreditation this year by the American Association for Accreditation of Laboratory Animal Care. As required, we are unifying the animal care and use programs of individual institutes into an NIH-wide program founded upon the principles of the *NIH Guide for the Care and Use of Laboratory Animals* and the PHS animal welfare policy.

AIDS Research

NIH continues to play a leading role in the Federal Government's efforts against AIDS through studies conducted by our intramural scientists, grantees, and contractors. Our AIDS efforts now involve every NIH component; the FY 1989 budget is estimated to be more than \$600 million.

To strengthen and coordinate AIDS research and activities at NIH,

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I appointed Dr. Anthony Fauci to be NIH's associate director for AIDS research and director of the NIH office of AIDS research. He continues to be director of NIAID. (In the next issue of *Update*, there will be an article on NIH's outstanding research advances on AIDS.)

Research Highlights

During 1988, research conducted or supported by NIH has led to many important basic and clinical advances, as illustrated by the following highlights.

- Scientists at the NICHD have identified an RNA segment that prevents iron build up in human cells. This is the first example in humans of RNA—rather than DNA—regulating a gene's action. This genetic switch, called iron responsive element (IRE), responds to large amounts of iron in the cell by signalling for the production of

the iron-neutralizing protein ferritin. When iron levels decrease, IRE's halt the ferritin-making process. Scientists can attach synthetic IRE's to virtually any gene in a cell culture and then turn the gene on or off by exposing it to different amounts of iron, thus regulating how much of a medically useful protein the gene produces. IRE's appear to be more reliable and easier to control than other genetic on-off switches currently used in biotechnology.

- NINDS grantees used "plating," a surgical procedure to stabilize the spinal canal in a small number of patients with cervical spinal cord injuries. Upon entering the hospital, patients underwent immediate surgery during which a metal plate was screwed into vertebrae over the damaged segment of spinal cord. Most patients could be out of bed within 24 hours after surgery, reducing the risk of

pulmonary complications and bed-sores. Surgery also eliminated any later need for bone grafts or traction, and shortened the time in intensive care. The investigators are seeking an Investigational Device Exemption from FDA to begin controlled trials.

- A major hurdle to the use of gene therapy is getting the transferred gene to be expressed adequately so that sufficient protein is produced to correct the defect involved in the genetic disease. Because inserted DNA often integrates in a random fashion, researchers felt that if the new DNA could be targeted to integrate into the site where it is normally found, it should be expressed better. Two teams of NIGMS grantees have accomplished this in cultured cells, using a method called homologous recombination. The scientists are using the technique to create animal models to study various genetic diseases; ultimately it will be used as an approach to human gene therapy.

- In a mouse model of insulin-dependent diabetes, grantees of NIDDK blocked islet cell destruction by treatment with a monoclonal antibody (MAb) against the antigen on mouse T cells that is the CD4+ counterpart on human T cells. The treatment reversed the advanced phases of islet cell destruction, and the mice remained disease-free without further treatment. The MAb reacted with and killed the T cells believed to play a key role in the autoimmune process that underlies IDDM. These studies provide the basis for a possible treatment that, when combined with genetic screening for high-risk individuals, could one day prevent IDDM.

- NCI scientists have developed a simple urine test that, in a small study, shows promise of detecting bladder cancer at an early, potentially



Construction has already begun on The Children's Inn at NIH, a home away from home for up to 36 families participating in pediatric studies at the Clinical Center. Located on the north side of the campus, the 32,000-square-foot residence should be complete in time for Christmas 1989. Further coverage of this and other construction projects on campus will be included in the next issue of NIHAA Update.

curable stage. The test detects an autocrine motility factor, a protein secreted by cancer cells that enables them to migrate from the primary tumor site. AMF levels were highest in urine from patients whose cancers were most invasive. The assay, which should be ready for clinical trials in two years, also was highly accurate in detecting bladder cancer recurrence following treatment.

- Preliminary evidence indicates that some cases of Alzheimer's disease may be due to an infectious agent. Grantees of NIA and NINDS have transmitted a blood-borne virus from humans with AD, or their relatives, to hamsters. The animals developed a fatal brain disorder, with a pathology similar to that of Creutzfeldt-Jakob disease. When a second series of hamsters was inoculated with brain tissue from some of the previously infected animals, all developed a more severe and rapidly progressive form of the disease. Hamsters may be incapable of expressing the long-term neuropathological changes of AD, a uniquely human disorder. If an infectious agent exists, factors in the environment or within the body could trigger the onset of dementing disease.

- Briefly freezing the sclera reduced the risk of severe visual loss by one-half in babies with advanced retinopathy of prematurity (ROP), according to results of a multicenter clinical trial sponsored by NEI. ROP causes visual loss in 2,600 infants in the United States annually. Cryotherapy creates a ring of scar tissue that stops the retinal blood vessels from growing excessively, thus halting the progression of ROP. Retinal scarring may cause some loss of side vision but does not affect the macula. The treatment's long-term effects will continue to be assessed.

- In a study of 200 women, epidemiologists from NIEHS found

that 22 percent of pregnancies were lost without being clinically recognized, in what seemed to be an ordinary menstrual period. The unsuspected pregnancies were detected by means of a new assay—developed largely through NICHD support—for the pregnancy hormone human chorionic gonadotropin. This assay, which can detect the hormone in urine about a week after fertilization, is 100 times more sensitive than conventional tests. Importantly, women who lost pregnancies early soon conceived again; most of these pregnancies ended in live births. This method will be used to explore effects of occupational and environmental hazards on human reproduction.

- NIAID researchers have isolated and cloned the gene that encodes an important protein on the surface of the sexual stage of *Plasmodium falciparum*, which causes the most severe form of human malaria. The protein could be used in a vaccine to interfere with the parasite's sexual stage that develops in erythrocytes and is picked up by mosquitoes when they feed on an infected person. The altruistic vaccine would be given to those infected with malaria, thus interrupting the parasite's transmission cycle and preventing its spread to others.

- Estrogen deficiency is a primary factor in postmenopausal osteoporosis, and estrogen therapy effectively prevents the accelerated bone loss. To explain this effect, scientists postulated the existence of estrogen receptors on bone cells but have been unable to detect any. Using new sensitive methods, two independent research teams supported by NIAMS, NIA, NICHD and NCI demonstrated the presence of estrogen receptors on human and animal osteoblast-like cells in culture. The mRNA for the estrogen receptor was also present in the nor-

mal human cell lines. Thus, estrogen can act directly on osteoblasts and thereby modulate the extracellular matrix and other proteins involved in maintaining skeletal mineralization and remodeling.

- Scientists at NIDR have synthesized a peptide—YIGSR—that blocks tumor metastasis *in vitro* and in animals. YIGSR, a fragment of a major basement membrane protein called laminin, is believed to compete with laminin for its receptors on tumor cells. The cells' attachment to laminin is the first step in the process of invasion and metastasis. In an assay developed by NIDR researchers, the YIGSR-containing peptide blocked tumor cells from binding to and invading a synthetic basement membrane. When injected along with tumor cells into mice, the peptide dramatically reduced formation of lung tumor metastases. More potent peptides are being developed that could have various uses, including the prevention of tumor cells mechanically liberated during surgery from creating metastases.

- A multicenter, double-blind, randomized trial by NHLBI and DRR found that flecainide and encainide were more effective than moricizine or imipramine in suppressing ventricular arrhythmias in 502 patients enrolled within 60 days of an acute MI. Patients were randomly assigned to one of five combinations of the drugs or a placebo. Imipramine had a high rate of intolerable side effects. Based on these results, NHLBI has initiated a large-scale clinical trial to assess the efficacy of encainide, flecainide and moricizine in reducing sudden cardiac death rate in patients who have had MI's within the previous two years.

This article was prepared with the assistance of Bobbi Bennett, Office of Communications, OD.

Reflections (continued from p. 1)

The daughter of a physician in Prairie Grove, Ark., Dr. Pittman was born in 1901. She excelled in mathematics and biology at Hendrix College, a Methodist institution in Conway, Ark. After serving for two years as teacher and principal in the academy of a girls' college, she enrolled in the University of Chicago, where she obtained M.S. (1926) and Ph.D. (1929) degrees in bacteriology.

In 1928 she moved to the Rockefeller Institute for Medical Research in New York City (now Rockefeller University) to work with Dr. Rufus Cole, director of the hospital. There she addressed the question, "Does *Haemophilus influenzae* cause influenza?" Her focus changed, however, when she found two strains of the organism that were encapsulated—a "first" demonstration that earned her international respect before she was 30 years old. Four other capsular types were identified, but it was type "b" that caused highly fatal meningitis in young children. Preparation of the first type specific *H. influenzae* antiserum for therapy led her into life-long work on the control of biologics, largely bacterial antisera and vaccines. In 1936 she came to NIH and remained on the staff until retirement from the Division of Biologics Standards in 1971. Since that time, she has been a guest worker in the division. For the first issue of *NIHAA Update*, we asked Dr. Pittman to reflect on her more than 50-year association with NIH.

Q: What impressed you most when you first began work at the NIH?

A: I was much impressed by the number of studies that were directly applicable to public health. There was a great deal of collaboration. I worked with Drs. F. J. Daft, H. F.

Frazier, and W. H. Sebrell (later a director of NIH). They were interested in nutrition. We treated dogs with severe blacktongue (a disease in dogs equivalent to pellagra in humans) with codehydrogenase, a growth requirement of *H. influenzae*.

Q: Who were some of the other people here at that time?

A: Edward Francis, who worked on tularemia, Rolla Dyer, who also became director of NIH. Trendley Dean was just beginning to work on fluoride prevention of dental caries.

There were three pioneer women microbiologists before I came. Ida Bengtson was the first. She did beautiful work on standardization of gas gangrene antitoxins for the League of Nations. Alice C. Evans was famous for her work on brucellosis. I worked with Sara E. Branham, who had been one of my teachers at the University of Chicago, in the development of a potency assay for antimeningococcus serum.

Q: You arrived shortly before Dr. George W. McCoy retired as NIH director. Could you comment on his work?

A: It impressed me that Dr. McCoy did all inspections of licensed manufacturers of biologics personally. Of course, there were not so many then.

Q: At the end of the 'thirties and during the early 'forties, NIH moved to Bethesda from downtown.

A: Yes. We moved out in the spring of '41, the last ones to come out. In Bethesda, the divisions with larger staffs were located in separate buildings. Since people were separated, there was a decrease in intellectual cross-fertilization.

Q: At about the same time, World

War II started. How was your work redirected toward wartime problems?

A: It was directed largely to the safety and purity of plasma and whole blood for the armed services. Plasma, obtained from a large number of units of blood, was filtered and bottled. Occasionally the plasma caused a severe fever reaction in a patient. Pyrogens had been produced by growth of bacteria in the refrigerator before filtration. I worked with Thomas Probey in the development of the rabbit assay for presence of pyrogens. Using a collection of contaminants from plasma and other sources, we found that not more than 5,000 bacteria per milliliter of plasma could be present before filtration.

Whole blood reactions likewise were caused by bacteria that grew during refrigerator storage. In other cases, the unit of blood was contaminated with air bacteria by withdrawing a sample for sterility testing. This led to the requirement that a sample of blood in a test tube be attached to the blood container. This sample is used to test for sterility, blood group, hepatitis, and now for AIDS. The blood container is never entered for a sample.

The failure of some contaminants to grow at 37° C. prompted the requirement that the sterility test be incubated at two temperatures. After a study of each ingredient in the sterility test medium, the formula was revised and has remained unchanged in the U.S.A. and internationally.

During these studies there was excellent cooperation with the manufacturers of biologics. As business management changed after the war, however, openness declined.

Q: How did you get into pertussis research?

A: In 1943, Dr. Milton Veldee,

director of the Biologics Control Laboratory, handed me a small piece of paper, handwritten because we had only one secretary: "Develop a standard of potency for pertussis vaccine," it said. Others who had tried to develop a potency assay for pertussis had failed. Dr. Pearl Kendrick and Dr. Grace Eldering in the Michigan Department of Health Laboratories had successfully pioneered the development of a pertussis vaccine that provided significant protection against whooping cough. But even they had failed to develop a potency assay.

About this time, Dr. John Foote Norton, one of my professors at the University of Chicago who was then at Upjohn Company, and Dr. John Dingle were working on a potency assay for typhoid vaccine. They tried intracerebral (IC) challenge of mice. Dr. Norton observed that pertussis vaccinated mice were protected against lethal IC challenge with *Bordetella pertussis*. He reported this observation to Dr. Kendrick and me. At that time the dose of vaccine was expressed in millions of bacteria. We developed an opacity standard; then we exchanged information during the development of an IC challenge potency assay. U.S. Requirements for Pertussis Vaccine were prescribed in 1949. Potency of the bacteria was determined relative to the bacteria in a reference vaccine. In 1953 the U.S. promulgated a standard of 12 units per total immunizing dose. This requirement became the basis of the international potency requirement of the World Health Organization.

Q: Pertussis vaccine, of course, has a greater number of toxic side-effects than some other vaccines. When did you become involved in studying the pertussis toxin?

A: From the beginning, I was con-

cerned about the toxicity of pertussis vaccine. A mouse test was specified in the first Requirements in 1949. Eventually, at least four toxins were described. But it was not until I was a guest scientist at the University of Glasgow in 1976 that it suddenly came to me that pertussis had a true exotoxin, like diphtheria or cholera toxin, that caused the harmful effects and the prolonged immunity of whooping cough. The hypothesis was presented three times at meetings in Scotland, in England, and at NIH but no one paid attention. In 1978, at the Third International Symposium on Pertussis Vaccine, I presented my idea, and Dr. Emil C. Gottschlick said to his companion, "That is it. It is a toxin."

When Dr. J. B. Robbins gave a summary of the symposium, my concept was the first thing that he mentioned. Reprints of the paper then in press went like hotcakes. I don't have a single copy left. You see, the mind has to be prepared to receive a new idea. It is satisfying to have changed the direction of work on pertussis vaccine.

Q: Would you talk a bit about your involvement during the 1960's with the Southeast Asia Treaty Organization (SEATO) cholera project?

A: Yes. Dr. Joseph Smadel, an eminent research scientist, after serving four years as associate director of NIH, elected to come to the Division of Biologics Standards. SEATO had effected an improvement in smallpox vaccine and wanted to do something else beneficial for the health of the people of Southeast Asia. They decided to focus on cholera and selected Dacca as the target city. It was in East Pakistan at that time, which is now Bangladesh. Dr. John C. Feeley and I were brought in to help design the laboratories and equipment in the

Cholera Research Laboratory, a Public Health Service building that had already been built in Dacca but not occupied. Another laboratory was established, first in a tent, at Matlab Bazaar, which is accessible only by boat. Dr. Feeley and I developed standards for cholera vaccine.

NIH was in charge of the funds from SEATO and other sources. Dr. Smadel, of course, was the power behind the study, which was designed to cover the field from anthropology to clinical treatment. It was the most extensive study of an infectious disease up to that time. The late Dr. Robert Gordon was one of the first directors.

The high fatality of cholera is due to very rapid loss of fluid. Restoration of fluid is essential. Intravenous (IV) administration of more than 50 bottles of fluid may be required. Most important was the culmination of Dr. Robert A. Phillips's work of many years on IV restorative fluid. And finally, with cooperation of others, was the development of an oral formula for fluid with ingredients that are available in developing countries. It is now used worldwide for all kinds of dysenteries.

The SEATO Cholera Research Laboratory has been succeeded by the International Centre for Diarrheal Disease Research in Bangladesh.

Q: You have been associated with NIH for more than fifty years—
A: Fifty-two years.

Q: How would you compare your career in this government agency with the positions of your contemporaries in academia or industry?

A: I think working at NIH provided a golden opportunity. I was able to obtain the best information in my field, and it was very exciting and

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NIH Notes for 1988

HONORS AND AWARDS

Dr. Adriaan Bax, a visiting scientist in NIDDK's Laboratory of Chemical Physics, was named Maryland's Outstanding Young Scientist for 1987 by the Maryland Academy of Science ... **Dr. Tibor Borsos**, chief of NCI's Laboratory of Immunobiology and research professor of pathology at USUHS, received the Senior U.S. Scientist Award from the Alexander von Humboldt Foundation of the Federal Republic of Germany ... **Dr. Samuel Broder** shared with Drs. Gallo and Montagnier the CIBA-GEIGY Drew Award in Biomedical Research ... **Dr. Willy Burgdorfer**, scientist emeritus in NIAID's Laboratories of Pathobiology at the RML, Hamilton, Mont., was honored at a workshop in Bethesda co-sponsored by NIAMS and NIAID, for his seminal discovery of *Borrelia burgdorferi* as the etiologic agent of Lyme disease. He was also the winner of the Robert Koch Foundation Gold Medal for 1988 ... **Dr. Gerald Chader**, chief of the Laboratory of Vision Research, NEI, received the Jonas S. Friedenwald Award for his outstanding work on vision research from the Association for Research in Vision and Ophthalmology ... **Dr. Lois K. Cohen**, assistant director for international health and chief of planning, evaluation and communications at NIDR, was selected the 1988 Percy T. Phillips Visiting Professor at Columbia University, School of Dental and Oral Surgery ... **Dr. Philip S. Chen, Jr.**, NIH associate director for intramural affairs, was the recipient of the Presidential Meritorious Executive Rank Award ... **Dr. David R. Davies**, chief, section of molecular structure, NIDDK, received a Presidential Distinguished Senior Executive Award ... **Dr. Vincent T. DeVita, Jr.**, former NCI director, received the first Pezcoller Foundation Award, Sept. 10, in Trento, Italy, in recognition of his "innovative work on the curative chemotherapy of lymphoma, as well as the overall stimulus and leadership he has given to the field of oncology" ... **Dr. John W. Diggs**, director of the Extramural Activities Program, NIAID, received the Presidential Meritorious Executive Rank Award ... **Dr. John C.**

Donovan, director of NCI's Office of Laboratory Animal Science, was installed as a member of the board of directors of the American College of Laboratory Animal Medicine at its annual meeting in Chicago in July ... **Dr. Anthony S. Fauci**, director of NIAID and NIH associate director of AIDS research, was honored by the Columbus Citizen Foundation of New York. He was also selected the Public Health Leader of the Year by the Commissioned Officers Association of PHS ... **Dr. Gary Felsenfeld**, chief of the section on physical chemistry in NIDDK's Laboratory of Molecular Biology, was chosen for the Presidential Distinguished Executive Rank Award ... **Fogarty International Center's Volunteer Services Program**, was the recipient of a special achievement award from Montgomery County for "unselfish and devoted volunteer efforts" ... **Dr. Thomas Folks**, senior investigator in NIAID's Laboratory of Immunoregulation, was named winner of an award from the Weizmann Scholarship Foundation ... **Dr. Carleton Gajdusek**, NINDS scientist, was honored for his contributions to children's health by being inducted into Ambassador David M. Walters International Pediatrics Hall of Fame at Miami Children's Hospital ... **Dr. John I. Gallin**, director of the intramural program for NIAID, was presented with an honorary doctorate of science degree by his alma mater, Amherst College, at its 1988 commencement ceremonies ... **Dr. Robert C. Gallo**, chief of NCI's Laboratory of Tumor Cell Biology, was the winner of two awards. He shared with Dr. Luc Montagnier of the Institute Pasteur, Paris, the 1988 Japan Prize, one of Japan's most prestigious awards, for research on acquired immune deficiency syndrome. Gallo also shared with Broder and Montagnier the CIBA-GEIGY Drew Award (the second time he was so honored). He was also elected to membership in the National Academy of Sciences ... **Dr. Igal Gery**, chief of the experimental immunology section, NEI, received the International Monokine Workshop Research award, sponsored by the Reticuloendothelial System Society. He was recognized for his 1971 discovery of interleukin 1 ... **Dr. Ada Sue Hinshaw**, director of the National Center for Nursing Research, received several awards: the Elizabeth McWilliams Miller Award for Excellence in Nursing

Research by Sigma Theta Tau International and two honorary doctor of science degrees for distinguished contributions to nursing education and research, one from the University of Maryland and the other from the Medical College of Ohio ... **Dr. David G. Hoel**, director, Division of Biometry and Risk Assessment, NIEHS, has been elected to the National Academy of Sciences' Institute of Medicine ... **Karen Howard**, grants technical assistant in the Division of Digestive Diseases and Nutrition, NIDDK, was named 1988 Secretary of the Year by the Bethesda chapter of Professional Secretaries International ... **Dr. Donald M. Jerina**, chief of the section on oxidation mechanisms in NIDDK's Laboratory of Bioorganic Chemistry, was given the 1988 Alumni Achievement Award by Knox College, Galesburg, Ill., in recognition of his outstanding career as a research chemist ... **Dr. David F. Johnson**, an NIDDK research biologist, has been elected to an 8-year term on the Allegheny College board of trustees ... **Chaplain LeRoy Kerney**, chief of the Clinical Center's Department of Spiritual Ministry, was honored by the College of Chaplains with its "Distinguished Service Award" for 33 years of "leadership in pastoral care of institutionalized persons" ... **Dr. Seymour Kety**, senior scientist in NIMH's intramural research program, was named, along with Dr. Louis Sokoloff, the recipient of the first National Academy of Sciences' Award in the neurosciences for their pioneering work and outstanding achievements in neurochemistry and clinical medicine through the development of techniques for measuring brain blood flow and metabolism ... **Dr. Richard Klausner**, NICHD scientist, received the "Outstanding Young Investigator" award from the American Federation of Clinical Research for his research detailing the biological mechanisms that regulate how cells take in and use iron ... **Dr. Edward D. Korn**, chief, Laboratory of Cell Biology, NHLBI, received the Presidential Meritorious Executive Rank Award ... **Dr. Harvey Kupferberg** director of the preclinical pharmacology section in the NINDS epilepsy branch, received the 1988 Epilepsy Research Award for outstanding contributions to the pharmacology of antiepileptic drugs ... **Dr. Harald Loe**, director of NIDR, was the recipient of two awards: the Swedish Dental Society's International Prize and the Surgeon General's Exemplary Service

Award ... **Dr. Claude Lenfant**, director of NHLBI, was awarded an honorary doctor of science degree from the State University of New York at Buffalo. Lenfant also received the Presidential Meritorious Executive Award ... **Dr. Charles R. MacKay**, director of the Division of Program Development and Evaluation of the NIH Office for Protection from Research Risks, was selected as the regents' lecturer at the University of California, Berkeley, during 1988-90 academic year ... **Dr. George R. Martin**, chief, Laboratory of Developmental Biology and Anomalies, NIDR, received the Presidential Meritorious Executive Rank Award. He was also selected to deliver the 1988 G. Burroughs Milder Lecture on "Basement Membranes: Key Determinants of Differentiation and Their Role in Cancer Metastasis" ... **Dr. Bernard Moss**, chief, Laboratory of Viral Diseases, NIAID, was named winner of the 1988 Dickson Prize from the University of Pittsburgh in "recognition of his distinguished scientific accomplishments to the fields of virology and molecular biology" ... **Dr. Abner L. Notkins**, director of NIDR's intramural research program and chief of the Laboratory of Oral Medicine was recognized in November 1988 at the 13th International Diabetes Federation Congress in Sydney, Australia. He was given the first Rolf Luft Award Medal for "pioneering contributions to diabetes research." ... **Joseph D. Naughton**, chief of the Computer Center Branch, DCRT, was inducted into the Government Computer News Hall of Fame ... **Dr. Robert Nussenblatt**, clinical director of the NEI, received an honorary Ph.D. from Bar-Ilan University in Ramat-Gan, Israel, for his work in the immunology of eye diseases ... **Dr. Joram Piatigorsky**, chief, Laboratory of Molecular and Developmental Biology, NEI, delivered the first Hans Bloemendal Lecture at the University of Nijmegen in The Netherlands ... **Dr. William E. Paul**, chief of NIAID's Laboratory of Immunology, was selected as the winner of the 3M Life Sciences Award, which honors outstanding contributions to the field of modern immunology ... **Dr. Robert H. Purcell**, medical director, Laboratory of Infectious Diseases, NIAID, was elected to membership in the National Academy of Sciences ... **Dr. David P. Rall**, director of NIEHS, received the WHO "Health for All 2000" Medal ...

Dr. William F. Raub, NIH deputy director, was recipient of the Presidential Distinguished Executive Rank Award ... **Dr. Matilda White Riley**, the associate director for behavioral and social research at NIA, received the 1988 Distinguished Scholar Award from the American Sociological Association's section on aging. She was also named one of America's 100 Most Important Women by the *Ladies Home Journal* ... **Dr. Steven A. Rosenberg**, chief of NCI's Surgery Branch, was awarded both the Grifffuel Prize and a special Hammer Cancer Prize for Adoptive Immunotherapy ... **Dr. Jesse Roth**, director of NIDDK's Division of Intramural Research, won two awards for his contributions to diabetes research. He was named winner of the first annual Medical Research Award of the National Health Council and also received the fifth annual Steven C. Beering Award for Advancement in Medical Science from the University of Indiana ... **Randy Schools**, general manager of R&W at NIH, was named a "Washingtonian of the Year" in the January 1989 issue of *Washingtonian* magazine for his humanitarian efforts ... **Dr. Michael D. Shelby**, a geneticist with NIEHS, received the Alexander Hollaender Award for his work in the field of environmental mutagenesis ... **Dr. Maxine F. Singer**, chief of the Laboratory of Biochemistry, DCBD, was the recipient of the Presidential Distinguished Executive Award for her work on DNA ... **Dr. Thressa C. Stadtman**, chief of the section on intermediary metabolism and bioenergetics of the Laboratory of Biochemistry, NHLBI, was awarded the Klaus Schwartz Commemorative Medal for 1988 in recognition of her pioneering work on selenium ... **Dr. Louis Sokoloff**, chief of the Laboratory of Cerebral Metabolism, NIMH, won with Dr. Seymour Kety, the first National Academy of Sciences' Award in the Neurosciences ... **Dr. Boris Tabakoff**, director, Division of Intramural Clinical and Biological Research, NIAAA, received the 1988 Jellinek Memorial Award. He was also winner of the 1988 Research Society on Alcoholism's Distinguished Research Award at RSA's annual meeting held in Charleston, S.C. ... **Dr. John D. Termine**, chief of the Bone Research Branch, NIDR, was winner of the 1988 Basic Research in Biological Mineralization Award of the International Association

for Dental Research (IADR). It is one of nine distinguished scientist awards conferred annually by the IADR ... **Dr. Robert H. Wurtz**, chief of the Laboratory of Sensorimotor Research, NEI, was elected to membership in the National Academy of Sciences ... **Dr. J. Samuel Zigler, Jr.**, head of the cataract section in the Laboratory of Mechanism of Ocular Diseases, NEI, received an award from the Alcon Research Institute for his research on changes in the structure of lens crystallins that occur during aging and cataract formation ...

APPOINTMENTS AND PERSONNEL CHANGES

Dr. Samuel Broder, 17-year NIH cancer scientist and pioneer in AIDS research, was named by the White House in mid-December to be the 10th director of NCI. He replaced **Dr. Vincent T. DeVita, Jr.**, who resigned effective Sept. 1. In the interim **Dr. Alan S. Rabson**, the director of the Division of Cancer Biology and Diagnosis, was appointed acting director ... **Dr. Gene D. Cohen**, a leader in geriatric mental health research, was named deputy director of NIA ... **Dr. Kenneth A. Collins** was named chief of the International Services and Communications Branch, FIC ... **Dr. Sheldon G. Cohen** has moved from his job as the director of the Immunology, Allergic and Immunologic Diseases Program, NIAID, to be scientific advisor in the Office of the Director, IRP, NIAID, and also Scholar-in-Residence at NLM ... **Dr. Gregory A. Curt**, deputy director of NCI's Division of Cancer Treatment, was named in July director of medical education and chief of clinical pharmacology, Department of Medicine, at Roger Williams General Hospital in Providence, RI ... **Dr. Anthony Demsey** was appointed associate director for referral and review in DRG. He had been deputy director of the Division of Extramural Activities and Chief of Review Branch, NIDDK ... **Dr. Vincent T. DeVita, Jr.**, 9th director of NCI, resigned Sept. 1 to become physician-in-chief of Memorial Hospital at Memorial Sloan-Kettering Cancer Center in Manhattan in February 1989. He had been director since 1980 and at NCI, except for a 2-year stay at Yale, since 1963 ... **Dr. Lawrence R. Deyton** was named head of the newly created community clinical research section in NIAID's extramural AIDS pro-

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gram. He will also serve as NIAID assistant director for community research ... **Dr. Philip R. Dodge**, an internationally known neuroscientist at the Washington University School of Medicine in St. Louis, Mo., has been appointed special assistant to the NICHD director to focus on mental retardation research ... **Yvonne H. du Buy** has been named executive officer at NIDR. She served as budget officer at NIAID prior to her appointment ... **Dr. William Duncan** has been named chief of NIAID's Genetics and Transplantation Biology Branch of the Immunology, Allergy & Transplantation Program. He joined the branch as program officer in 1987. He replaces **Dr. Jane Schultz**, who will become director of research administration for the health sciences, University of Pittsburgh ... **Dr. Anthony S. Fauci**, director of NIAID, has also been named associate director of NIH for AIDS research ... **Dr. John R. Ferguson**, a neurologist with more than 22 years of experience in private practice, research and teaching, has been appointed director of the Office of Medical Applications. He will also head the Consensus Development Program and supervise other activities including coordination of Medicare coverage issues and the NIH Patent Program ... **Dr. Peter J. Fischinger** has been chosen vice president for research at the Medical University of South Carolina. Most recently, he has been director of the national AIDS program, after serving as deputy director of NCI. He had been at NCI since 1963 ... **Dr. Vay Liang W. (William) Go**, director of the Division of Digestive Diseases and Nutrition, NIDDK, since 1985, was named executive chairman and professor in the department of medicine at the University of California, Los Angeles in April ... **Dr. Richard A. Griesemer** has been appointed director of the Division of Toxicology Research and Testing at NIEHS, Research Triangle Park, N.C. ... **F. Grey Handley** was named chief of the Coordination and Liaison Branch, FIC ... **Dr. James C. Hill** has been named deputy director of NIAID. He had served as acting deputy director and also served as assistant to the director since 1984 ... **Dr. Jay Hoofnagle**, an expert on hepatitis, has been appointed director of the Division of Digestive Diseases and Nutrition at NIDDK. A federal scientist for the past 16 years, he has been a senior investigator in NIDDK's liver diseases section since 1976 and that institute's act-

ing clinical director since 1986 ... **Dr. Daniel F. Hoth** was named director of the AIDS Program, NIAID. He joined NIH in 1980 as head of the drug evaluation and reporting section within the Investigational Drug Branch, NCI ... **Dr. Daniel C. Ihde** was selected as editor-in-chief of NCI's biweekly *Journal of the National Cancer Institute* ... **Dr. Elke Jordan**, NIGMS associate director for program activities since 1982, has been named director of the newly created Office of Human Genome Research ... **Dr. Werner H. Kirsten** has been chosen the new associate director of the NCI-Frederick Cancer Research Facility (FCRF). He comes to NCI-FCRF from the University of Chicago's department of pathology, where he had been chairman since 1972 ... **Dr. Wayne C. Koff** was named chief of the Vaccine Research and Development Branch in the AIDS Program, NIAID ... **Dr. Richard M. Krause**, former director of NIAID, has rejoined NIH as senior scientific advisor to the FIC ... **Dr. Robert Lazzarini**, chief of the Laboratory of Molecular Genetics, NINDS, has been appointed director of the Brookdale Center for Molecular Biology of the Mount Sinai School of Medicine in New York ... **Dr. Marc E. Lippman**, former head of the medical breast cancer section, Medicine Branch, DCT at NCI was chosen to direct the Vincent T. Lombardi Cancer Research Center, Georgetown University ... **Norman D. Mansfield** was named NIH's new associate director for research services, a post that was formerly filled by **Dr. Edwin Becker**. Prior to this appointment Mansfield was the director, Division of Financial Management ... **Libby McKnight** has joined the staff of the Division of Equal Opportunity as a full-time sign language interpreter ... **Dr. Jay Moskowitz**, NIH associate director for science policy and legislation, has been appointed to head a new institute, the National Institute on Deafness and Other Communication Disorders (NIDCD). He will continue in his present position and will serve until a permanent director is chosen ... **Dr. Charles E. Myers** was named to head the Medicine Branch in the Clinical Oncology Program of NCI's Division of Cancer Treatment ... **Dr. Mary Janet Newburg** has been appointed director of the Institutional Liaison Office in the Office of Extramural Research ... **Dr. Steven M. Paul**, chief, NIMH Clinical Neuroscience

Branch, has been appointed acting director, IRP, NIMH. He succeeds **Dr. Frederick K. Goodwin**, who was named administrator of the Alcohol, Drug Abuse and Mental Health Administration ... **Dr. Roger J. Porter**, chief of the Medical Neurology Branch in the NINDS Division of Intramural Research has been named deputy director of NINDS ... **Dr. Gerassimos G. Roussos** has been appointed chief of NIDR's Caries and Restorative Materials Research Branch. He had been director of the Pancreas and Gastrointestinal Digestion and Immunology Programs of the division of Digestive Diseases and Nutrition at NIDDK prior to accepting his new position ... **Dr. William A. Sadler**, chief of the Reproductive Sciences Branch, NICHD since 1979, has been named dean of the Graduate School of Arts and Sciences at Howard University ... **Dr. Philip E. Schambra** has been appointed director of the Fogarty International Center for Advanced Study in the Health Sciences effective Aug. 2 ... **Dr. Jack R. Schmidt** has been appointed chief of the Fogarty Scholars-in-Residence Branch, FIC ... **Dr. John Sever**, chief of the intramural research program's Infectious Disease Branch, NINDS, has left to become professor and chairman of the department of pediatrics at the George Washington University School of Medicine and senior vice president for medical and academic affairs of the Children's Hospital National Medical Center. He will also hold a guest-worker appointment with NINDS ... **Dr. Maxine F. Singer**, chief of the Laboratory of Biochemistry, DCBD, was named to head the Carnegie Institution of Washington. She still leads a research group at NCI ... **Dr. Edward Tabor** was named associate director, Biological Carcinogenesis Program in NCI's Division of Cancer Etiology ... **Dr. Craig Wallace**, who held the dual role of director of FIC and NIH associate director for international research, has joined the Office of NIH Director in the latter position as the two jobs are divided and **Dr. Carl Kupfer**, director of NEI, was named acting director of FIC ... **Dr. Henry Wagner** has resigned as chief of the section on neuronal interactions of the Laboratory of Neuropathology and Neuroanatomical Sciences, NINDS, to become scientist emeritus at NINDS ... **Dr. James D. Watson**, winner of the 1962 Nobel prize in medicine for his part

in discovering the structure of DNA, joined NIH on Oct. 1 as NIH associate director for human genome research. He will work at NIH part-time and continue to direct Cold Spring Harbor Laboratory on Long Island, a post he has held since 1968 ... **Dr. Frederico Welsch** has been named associate director for international affairs at NCI. He was executive officer to the Committee on Research at Harvard-Massachusetts Institute of Technology Division of Health Sciences and Technology ... **Dr. Luther S. Williams**, a molecular biologist and expert in biotechnology has been appointed deputy director of NIGMS. Prior to this appointment, he served for more than a year as special assistant for biotechnology to the NIGMS director ... **Dr. Robert Wittes**, director of NCI's Cancer Therapy Evaluation Program and editor-in-chief of the *Journal of the National Cancer Institute*, left to join Bristol-Myers, Wallingford, Ct., as senior vice-president for cancer research ... **Dr. Robert A. Whitney, Jr.**, currently director of DRS will become acting director of DRR (result of the merger of the two divisions, DRS and DRR) ... **Dr. G. Wayne Wray** has been appointed deputy director of NIDR's extramural program. He was a health scientist administrator in the NHLBI Review Branch prior to accepting his new position ... **Dr. Robert Young**, associate director of NCI's Centers and Community Oncology Program and former chief of NCI's Medicine Branch left NCI to become president of the Fox Chase Cancer Center in Philadelphia.

RETIREMENTS

Dr. Anton Allen retired from his position as chief of the comparative pathology section, Veterinary Resources Branch, DRS, after 32 years of service in that section, including 26 years as chief. He has joined Microbiological Associates, Bethesda, while continuing his research on diseases of laboratory animals as a part-time guest worker in VRB ... **Dr. Fred H. Bergmann**, director of the NIGMS Genetics Program since its inception, retired after almost 27 years of NIH service, 22 of which were spent with NIGMS ... **Dr. Kenneth S. Brown** retired Nov. 1. He served as a medical director in the PHS and as principal investigator in the connective tissues section, Laboratory of Developmental Biology and Anomalies, NIDR. He was with the institute for 27 years ... **Dr. Peter Condliffe** retired on

Aug. 3 as the chief of the Scholars-in-Residence Program of the Fogarty International Center, after a 37-year career with the federal government ... **Louis E. Cozart**, foreman of the NIEHS warehouse, retired after 38 years of federal service ... **Vivian F. Dickson** has retired after 29 years at NIH, the last 20 of which she spent with NIGMS ... **Dr. Robert Edelman**, deputy director of NIAID's Microbiology and Infectious Diseases Program since 1984, and medical director in the PHS Commissioned Corps, retired from federal service. He has joined the University of Maryland School of Medicine at Baltimore as professor of medicine and associate director for clinical research at the Center for Vaccine Development ... **Dr. Mischa E. Friedman** retired from federal service after almost two decades with DRR. He was associate director for referral and review and chief of the Referral and Review Branch ... **Dr. John R. Gill, Jr.**, a senior investigator with the NHLBI's Hypertension-Endocrine Branch since 1960, retired after 31 years of federal service ... **James Walling Harrison (a.k.a. Dink)**, a clerk-typist in the disbursing section of the Division of Financial Management, retired after almost 18 years of federal service ... **Dr. Richard C. Greulich**, scientific director for two institutes during his 22 years at NIH, retired from NIA. He had served as the institute's scientific director since 1977 and previous to that was scientific director (1966-74) of NIDR ... **James G. Hawkes**, director of the Division of Space Management, retired after a 38-year federal career that spanned many changes in the physical makeup of NIH ... **Joyce Jenkins**, administrative officer in NIAID's extramural program, retired Aug. 1 after 35 years of federal service ... **Dr. William S. Jordan, Jr.** retired in Oct. 1987, as director of the Microbiology and Infectious Diseases Program, NIAID ... **Marie Munsterteiger**, secretary to the chief, Bone Research Branch, NIDR, retired Mar. 1 after 30 years of government service, more than 20 of which were spent with NIDR ... **Dr. John E. Nutter**, medical microbiologist and health science administrator with NIAID for 15 years retired in January. He plans to continue his association with biomedical research activities and has joined Program Resources, Inc., operations and technical support contract at the Frederick Cancer Research Facility, in a managerial posi-

tion ... **John P. Patterson**, executive officer at NIDR, retired after 35 years of government service, 31 of those years with NIH ... **Dr. Betty H. Pickett**, director of the Division of Research Resources for the past 6 years, retired after 31 years of federal service ... **Gilbert D. Press**, budget officer for NIDR, retired after more than 30 years of government service ... **George F. Russell, Jr.**, director of the Division of Management Policy, retired Jan. 29 after 25 years at NIH and 37 years of federal service ... **Ed Singleterry**, long-time chief of the photography unit, Medical Arts and Photography Branch, DRS, retired after 34 years of work at NIH ... **Mary Virts** retired after 37 years working at various posts, always in Bldg. 1 ... **Lillian Wathen** retired at the end of August after 27 years at NCI as a secretary in the Dermatology Branch of the Division of Cancer Biology and Diagnosis ... **Dr. William T. Watson**, chief of the small animal section, Veterinary Resources Branch, DRS, has retired from the PHS Commissioned Corps after 12 years of service at NIH and 11 years of service in the U.S. Army Veterinary Corps. He has accepted the position of director of laboratory animal resources at Massachusetts General Hospital, Boston, with an academic appointment at Tufts University Medical College ... **Dr. Richard I. Webber**, chief, Diagnostic Systems Branch, NIDR, retired Dec. 1. His career in the PHS Commissioned Corps spanned more than 25 years. He will join the University of Alabama at Birmingham as chairman, department of diagnostic sciences in the School of Dentistry ... **Henry Whitehead**, an audiovisual technician with the Division of Technical Service, retired after 34 years of work at NIH.

DEATHS

Dr. Frederick S. Brackett, a renowned biophysicist, died Jan 28 of a heart attack. He was recognized for his work in the field of spectroscopy. His involvement with NIH began in 1936 and even after he retired in 1961, he continued to serve as a consultant to NIAMD ... **Jo Braz**, 66, former chief of the Allergy and Infectious Diseases Nursing Service, died Oct. 29 in an automobile accident. Braz, who retired in 1982, had been with the Allergy and Infectious Diseases Nursing Services since 1955 ... **Dr. Robert G. Burnight**, 69, a former health scientist administrator at

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NCI and retired sociology professor died Aug. 1 at the Clinical Center ... **William F. Coleman**, chief, fire and emergency response section, Emergency Management Branch, Division of Safety, died Dec. 13, 1987. He began his career in the Fire Department of NIH in 1956 and was responsible for many improvements in emergency services to the NIH community ... **Dr. Robert L. Dixon**, who worked at NIEHS from 1972 to 1984, died Aug. 28 in Albany, N.Y., after a short illness. He began his federal career in 1969 when he joined NCI. At the time of his death, he was vice-president of drug safety at Sterling-Winthrop Research Institute in Rensselaer, N.Y. ... **Dr. Thaddeus J. Domanski**, 76, former chief of the Chemical and Physical Carcinogenesis Branch in the Division of Cancer Cause and Prevention, NCI, died of cancer Jan. 22 at Bethesda Naval Hospital. He had served 23 years in the military before joining NCI in 1966 ... **Sylvia Zilber Edelstein**, 50, data processing section chief in the NINCDS Biometry and Field Studies Branch, died after a lengthy illness. She had been with NIH since 1963 ... **Dr. Frederick P. Ferguson**, 72, former program coordinator of the biophysics and Physiological Sciences Program, NIGMS, died of a heart attack while travelling in Oregon. He had retired in late 1987 ... **John E. Fletcher**, 73, former vice-president for public affairs of Merck & Co., Inc., and a past director of public information at NIH from 1949 until 1960, died Feb. 13 in Philadelphia of cancer ... **Dr. Henry Nobuyoshi Fukui**, 64, director of the cataract program in the extramural and collaborative programs at NEI, died suddenly Mar. 6 ... **Dr. Abraham Goldin**, 76, a scientist emeritus with NCI and one of the pioneers in the use and design of cancer chemotherapy died of cancer on Aug. 5. He spent 40 years with NCI ... **Dr. Hyman Goldstein**, 79, a former chief of the biometrics branch of NINDB, died of a stroke Jan. 6, 1989, at Shady Grove Adventist Hospital ... **Jean Gilbert**, secretary to the NIH deputy director, died on Aug. 18. She had worked at NIH in Bldg. 1 for more than 19 years ... **Dr. Max Halperin**, 70, formerly of NHLBI, died of cancer Feb. 1. He was assistant chief and branch chief of NHLBI's Biometric Branch from 1966 to 1977. At the time of his death he was research professor of statistics at George Washington University and director of its biostatistics

center ... **Dr. John I. Hercules**, 63, a scientific project officer in the Sickle Cell Disease Branch of the Division of Blood Diseases and Resources, NHLBI, died of chronic hepatitis, Mar. 28 at the Clinical Center ... **Hope E. Hopps**, 62, a retired scientist and administrator at the Center for Drugs and Biologics, FDA, died of cancer Nov. 7 at George Washington University Hospital ... **Chaplain LeRoy G. Kerney**, 66, chief of the Clinical Center's Department of Spiritual Ministry, and chief of chaplains at NIH since 1963, died of a heart ailment on Jan. 13, 1989 ... **Dr. Takeo Kakunaga**, 51, a pioneer in studies on the genesis of human cancer, died of cancer on Sept. 21 in Osaka, Japan. From 1973 to 1984 he worked at NCI where he was chief of the cell genetics section, Laboratory of Molecular Carcinogenesis. He returned to Japan in 1984 ... **Dr. Marian Wood Kies**, 73, former chief of the section on myelin chemistry, Laboratory of Metabolism, NIMH, died Dec. 18 ... **Dr. Choh Hao Li**, professor and director, Laboratory of Molecular Endocrinology, University of California at San Francisco, died on Nov. 28, 1987. He had been selected as a Fogarty-Scholar-in-Residence and would have begun in May 1988 ... **Mike Levy**, 39, a health physicist with the Radiation Safety Branch, Division of Safety, since 1980 died as a result of a brain aneurysm on Jan. 9, 1989 ... **Alma Martinson**, longtime secretary to the chief of the Laboratory of Molecular Biology, NIDDK, died on Aug. 3 in New Port Richey, Fla. She had worked at NIH for 13 years prior to her retirement in 1982 ... **Rita Minker**, one of the original staff members of DCRT, died on Oct. 11. Illness had forced her to retire in April 1988, exactly 24 years after she joined NIH ... **Dr. Jack Orloff**, director of the Division of Intramural Research at NHLBI died of cancer on Dec. 6. He had been at NIH for 38 years. In October 1988 a scientific symposium was held at the institute to honor his accomplishments ... **Dr. Bertram Sacktor**, 66, chief of the Laboratory of Biological Chemistry at NIA's Gerontology Research Center in Baltimore for the past 20 years, died of an apparent heart attack July 8 in North Solomon, Me. ... **Dr. Norman E. Sharpless**, 72, a research chemist in the Laboratory of Chemical Physics, NIDDK, died of cancer Jan. 29, 1989. He had been at NIH for 51 years

beginning in 1936 when he joined NIH's industrial hygiene division. He retired in 1988 ... **Dr. Michael B. Shimkin**, 76, formerly with NCI, died of a stroke, Jan. 16, 1989, at the Medical Center of California at San Diego. In a career that spanned five decades, Shimkin wrote more than 300 articles and books and was director of field studies for NCI ... **Mary Jane Talley** died June 4, after a year-long illness. She had worked as biologist at NCI for 35 years. For the last 6 years, she worked in the Laboratory of Mathematical Biology, NCI ... **Kirk Weaver**, a management analyst for NIDR, died of cancer on Feb. 4, one day after completing 30 years of federal service at NIH ... **Mary Lois White**, a dedicated member of the NIH community for 28 years, died last summer. At the time of her death she was working at the NIH Print Shop.

Special Events in 1988

The year 1988 at NIH included several special events. Three institutes celebrated their anniversaries—NICHD's the 25th and NIAID and NIDR both commemorated their 40th.

A new institute was announced—the National Institute on Deafness and Other Communication Disorders (NIDCD).

The ACRF Amphitheater in the Clinical Center was named in honor of Dr. Mortimer B. Lipsett. He died in 1985 having devoted 25 years to NIH as a biomedical investigator, physician and administrator. He served as director in three of NIH's components; the CC, NICHD and NIADDK.

In May the newly renovated conference room in NIDR's Bldg. 30 was dedicated to the memory of Dr. H. Trendley Dean, first director of NIDR, and a pioneer in establishing water fluoridation as a safe and effective means to prevent tooth decay.

In a ceremony that officially closed NIH's centennial observation, NIH director Dr. James B. Wyngaarden dedicated artist Louise Nevelson's last major outdoor sculpture—Sky Horizon—in front of the Clinical Center. On permanent loan to NIH, the artwork was purchased by Edwin C. Whitehead in commemoration of the NIH centennial.

Reflections (continued from p. 9)

challenging to see improvement in a biologics product, even though some people considered sterility testing mundane. But all these links make the whole.

Q: How have people at NIH changed over the years?

A: My impression is that there is now a greater interest in self-promotion than in public health. This may be due to pressure to publish or perish. I am also concerned about the number of authors on papers today. A dozen or more people may have their names on one paper, but it is not possible for all of them to be directly involved in the work. We used to be so small that each person was directly responsible for the research project.

Q: Could you comment on NIH's contribution to the United States, to the world?

A: NIH has been and still is a leader in medical research throughout the world. There are many examples I could cite, but smallpox eradication may be the best. Smallpox vaccine was in use long before the Biologics Control Act in 1902. The Hygienic Laboratory (forerunner of the NIH) was delegated the responsibility to carry out that Act. The first year, 1903, eight manufacturers were licensed to produce smallpox vaccine. The research at NIH has also contributed to the development of protective vaccines against other infectious diseases, such as poliomyelitis, measles, rubella, mumps, rickettsial infections, pertussis, meningococcus and *H. influenzae* meningitis. The field is now open for new types of vaccines with the rapid developments in molecular studies. Each pinnacle reached broadens our horizons.

Retrospectives from the NIH Record**Spring 1949***First Woman to Get M.D. from Georgetown*

First woman graduate of Georgetown University's Medical School, Dr. Sarah E. Stewart, former NIH bacteriologist, will soon intern at the U.S. Marine Hospital on Staten Island.

With the benefit of a clinical background, Dr. Stewart hopes to resume her research work some day.

Spring 1959*Dr. Witkop Awarded Prize in Chemistry*

Dr. Bernhard Witkop, Chief of the Laboratory of Chemistry, NIAMD, has been named winner of the 1958 Hillebrand Prize by the Washington Section of the American Chemical Society.

Spring 1969*Dr. Roth Wins Award from Maryland Academy of Science*

The discovery that plasma insulin in man is composed of "big" and "little" insulin helped win for Dr. Jesse Roth, head of the section on Diabetes and Intermediary Metabolism, NIAMD, the Maryland Academy of Sciences' 1968 "Distinguished Young Scientist" award.

Spring 1979*NIH Authors, Papers Acclaimed Most Cited in Magazine Article*

A recent article in the publication *Current Contents* on the most cited authors and most cited scientific papers shows that 45 of the 300 most cited authors were NIH intramural scientists.

CALENDAR**April**

A "Symposium on the Molecular Basis of Disease" will be held on Thursday, April 27, in honor of Dr. DeWitt Stetten, Jr., NIH deputy director for science emeritus.

The symposium will be held in Masur Auditorium at the NIH Clinical Center from 8:15 to 11:45 a.m., sponsored by the Office of the Director, the Foundation for Advanced Education in the Sciences and the NIH Alumni Association.

Cochairmen will be NIH director Dr. James B. Wyngaarden, who will give the introduction, and Dr. J. Edward Seegmiller of the University of California, San Diego, who will give concluding remarks.

At 8:30, a lecture on "Molecular Approaches to Lysosomal Storage Disease: The GM2 Gangliosidosis" will feature Drs. Elizabeth F. Neufeld, Rachel Myerowitz and Richard Proia of the University of California, Los Angeles, and NIH.

Dr. Theodore Friedmann of UCSD will discuss "Approaches to Genetic Therapy of Metabolic and Neoplastic Diseases," at 9:10, followed by a coffee break at 9:50.

The symposium resumes at 10:10 with "Fibrinolysis, Proteolysis and Metastasis: The Cellular and Molecular Biology of Plasminogen Activation" by Dr. Thomas Gelehrter of the University of Michigan. He is followed at 10:50 by Harvard's Dr. Philip Leder speaking on "Development, Differentiation and the Cancer Problem."

For more information on the lecture, call the alumni office (301) 530-0567.



S P R I N G 1 9 8 9

March—May

The DeWitt Stetten, Jr. Museum of Medical Research, in cooperation with the NIH Clinical Center Art Galleries, will mount an exhibit, "Design of Life," in the Mortimer B. Lipsett Auditorium Lobby, NIH Clinical Center, March 1 through May 30, 1989. Featuring the

molecular art of scientific illustrator Irving Geis, the exhibit will include different media that have been used to represent protein structure, including molecular models and computer graphics. For further information, contact the museum's curator, Dr. Victoria A. Harden, (301) 496-6610.

For information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.

If You Are Not Yet A Member Of The NIHAA

[Clip and mail]

TO:
Foundation for Advanced Education in the Sciences or to NIHAA Office
NIHAA 9101 Old Georgetown Rd.
Building 10, Room B1-L-101 Bethesda, MD 20814
National Institutes of Health
Bethesda, Maryland 20892

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

from _____ (Title) _____ (Organization)
to _____ . My membership dues of \$ _____
(Years)
are enclosed payable to FAES/NIHAA.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment: _____

Mailing Address: _____

City, State, and Zip Code: _____

Telephone: _____

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are welcome. Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at NIH. Present NIH staff are invited to join as associate members.

NIHAA Update
9101 Old Georgetown Rd.
Bethesda, MD 20814

Director Reflects on 7 ½ Years at NIH

By Rich McManus

On July 31, NIH director Dr. James B. Wyngaarden relinquished what many consider the most powerful post in American medicine. He left behind a legacy that is at once easily computed and hard to fathom.

Easy to grasp are the achievements that numbers can capture. Arriving as director on Feb. 1, 1982 (though not formally inducted until Apr. 30), he gave himself the goal of doubling the NIH budget during his term. The 1990 budget assures fulfillment of that ambition.

In the 4 years preceding his arrival on campus, NIH suffered a 14 percent loss in purchasing power. During his 7½-year term, the institutes have realized a 35-40 percent gain in purchasing power.

Other statistics salute his dedication to stabilizing and promoting the advance of biomedical research.



Dr. James B. Wyngaarden at "farewell chat" with employees on July 25

Both the number and duration of investigator-initiated research project grants are up, a robust construction program is underway on campus, vigorous and talented staff occupy virtually all top management positions, a full-scale assault has been mounted on the AIDS epidemic and the most ambitious biomedical research project ever attempted—the human genome initiative—has begun under Wyngaarden's leadership.

"After I announced my resignation (on Apr. 20), some members of Congress called to thank me for the job I did," said the director in a recent interview. "I ended up thanking them more for *their* support. They said that I brought credibility to the institution because I wouldn't do anything foolish. I thought that was kind of a nice statement."

Pride in having lived up to the public trust emerges as Wyngaarden's most treasured success.

In February 1982, Wyngaarden began what was to be the longest term of any NIH director, save Dr. James A. Shannon, since the 1940's. He also learned he was in for two big surprises.

The first, he says, is "the degree to which NIH is tethered to the department (DHHS). It seems as though every decision is second-guessed, delayed or not acted on. It's almost impossible for the director to direct because he himself is being directed."

The second surprise was the ubiquity and tenacity of special interest groups, including myriad voluntary health organizations.

"They are extraordinarily interested in anything that we do," he related. "No matter what decision you make that favors one group, you are sure to hear about it from the others."

(See *Director* p. 14)

NIH Campus Undergoes Face-lift

If you have not been back to NIH's Bethesda campus in, say, the past week or two, you may not recognize the place. That's because one of the most ambitious construction and renovation programs in NIH history is underway.

No one knows this better than adventurous joggers or walkers trying to thread their way between projects that have already started. Bulldozers, dirt piles and trenches are but a few of the obstructions. Dump trucks, cranes and construction fences are added obstacles.

Perhaps the most unique new structure is the Children's Inn at NIH, a residence for up to 36 pediatric patients and their families being erected on the north side of the reservation.

Crafted in the style of a private dwelling, the inn is being built courtesy of a \$3.5 million gift from pharmaceutical firm Merck & Co., Inc. The 32,000-square-foot facility, when completed in February 1990,

(See *Face-lift* p. 2)

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Face-lift (continued from p. 1)

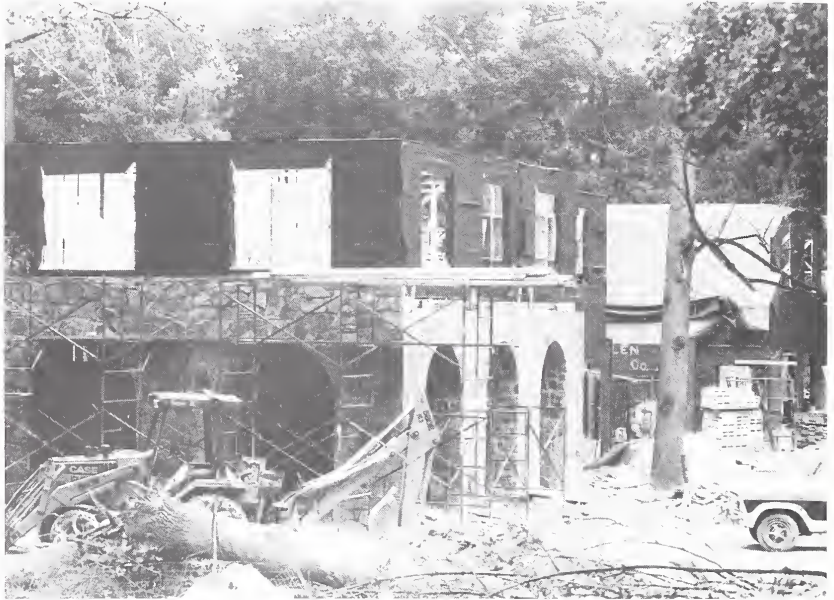
will be a home-away-from-home for young patients with cancer and other diseases.

Larger than the inn, but belonging more explicitly to the research mission of the institutes, is Bldg. 49, the Child Health and Neurosciences Building now rising just west of NIDR's Bldg. 30. A future home for some 500 employees studying brain function and mental retardation, the seven-story structure will also house a modern primate facility. Investigators from seven institutes will work in Bldg. 49, which is slated for completion in late 1992.

Perhaps the most widely anticipated construction project, because it will involve the most people, is still confined to the drawing board. Dubbed the Consolidated Office Building (COB), this project will return some 3,000 employees currently occupying rental buildings in the area to the NIH campus. It will include 9 stories of office space, 4 floors of parking and cost about \$120 million. The COB, scheduled for completion in 1994, will stand near Stone House and the Medical Center Metro station.

Also on the drawing board are additions to Bldgs. 14 and 29. Currently awaiting funding, Bldg. 14D-1 will stand between 14C and D, and contain laboratories, offices and animal surgery rooms. Bldg. 29B will be built next to the FDA's Bldg. 29A and host the Center for Biologics Evaluation and Research, a program supporting AIDS vaccine research. Construction is slated for completion in July 1993. At Bldg. 30, the dental institute plans a five-story tower addition on the east side to house cage washing, mechanical and support space in addition to three floors of laboratory space.

(See *Face-lift* p. 18)



The stone facade of the Children's Inn at NIH is already apparent as builders make progress on the facility, which will be a home-away-from-home for up to 36 pediatric patients and their families. Built on the north side of the NIH campus, the inn is scheduled for completion in February 1990.



A bulldozer scrapes dirt as the foundation is prepared for Bldg. 49, the Child Health and Neurosciences Building now rising on the west side of campus. Framing the 'dozer are Bldgs. 36 and 37. The new building, scheduled for completion in late 1992, will be seven stories tall and house investigators from seven institutes. It will also include a state-of-the-art primate facility.

Donate To The Children's Inn

The Children's Inn at NIH is 50 percent complete. The planned opening date is Feb. 14, 1990. While the cost of the building has been fully funded by Merck & Co., Inc., the Friends of the Children's Inn, Inc., is raising funds for the operating expenses of the inn. Donations may be mailed to and further information obtained from the Friends of the Children's Inn, Inc., Bldg. 31, Rm. B1W30, Bethesda, MD 20892, (301) 496-6061.

Update on Animal Rights Activities

The decade of the 1980's has seen a rise in antivivisection activity, often termed "animal rights."

Since 1985 there have been several demonstrations on the Bethesda campus. The largest occurred on Apr. 24, 1989, when 200 demonstrators protested the use of animals in research. After a rally, nearly 40 activists linked arms to block traffic on Wisconsin Avenue (near the National Library of Medicine entrance) for 30 minutes. Then, a small band of protesters headed to the Shannon Building (Bldg. 1). They chanted and pounded on the outside set of doors, breaking it open and damaging one of the doors. Some arrests were made and court actions are pending.

Earlier this year, the clandestine group known as the Animal Liberation Front claimed responsibility for the theft of animals from NIH-supported research projects at the University of Arizona (Tucson) and Texas Tech University, Lubbock.

Cystic Fibrosis Gene and Protein Discovered

A team of researchers led by NIDDK grantees Dr. Lap-Chee Tsui at the Hospital for Sick Children in Toronto and Dr. Francis Collins at the University of Michigan in Ann Arbor have identified the cystic fibrosis gene. They have also determined the error in the gene that causes 70 percent of the cases of CF: a deletion of 3 bases that code for one acid, a phenylalanine. This means that the gene directs the production of a defective protein, which its discoverers have named the Cystic Fibrosis Transmembrane Regulator (CFTR). It belongs to a class of proteins involved in regulating ion transport, which is thought to be the biochemical mechanism that is defective in CF.

The most common lethal genetic disease of Caucasians, CF affects about 2,000 babies born each year in this country and a total of more than 30,000 Americans. Patients with this disease produce copious amounts of thick, sticky mucus that impairs digestion and breathing, and makes them prone to chronic respiratory infections. These infections and the subsequent lung destruction are the major cause of death from CF. About half of those with the disease die before their mid-twenties.

NIDDK director Dr. Phillip Gorden said, "The CF gene is the key to understanding fully the underlying biochemical defect in CF and to designing treatments aimed at correcting this defect rather than just treating the symptoms of the disease. This advance is an example of the rewards of basic research, which gives scientists the tools they need to explore this disease at a molecular level."

Now that the gene has been identified, more families with CF will be studied to see whether different defects in the gene can account for the variable severity and manifestations of CF among families. The discovery also should lead to improved screening for CF.

This research was also supported by the Cystic Fibrosis Foundation, the Howard Hughes Medical Institute and the Canadian Cystic Fibrosis Foundation.

A Sampling of News About NIH Alumni Members

Dr. Robert A. Aldrich, former director of NICHD, 1962-64, now at Children's Hospital in Seattle: "I have just completed 2-5 year study comparing health care systems of British Columbia and Washington state. Data have brought strong national interest including a spot on NBC Nightly News in July... The British Columbia outcomes are as good or better than Washington state, they cost no more (a little less) and cover 100% of the B.C. population. Public approval in B.C. is over 75%—almost the reverse is true in Washington state—How come?"

Dr. Bahige M. Baroudy, former visiting scientist at NIAID, 1979-85, writes: "On July 1, 1989, I began my tenure as the new director of the division of molecular virology at the James N. Gamble Institute of Medical Research, Cincinnati, Ohio. I plan to establish a strong program in both hepatitis and AIDS research. I would like to initiate a chapter of NIH Alumni in Cincinnati."

(See Members p. 12)

NIHAA Forum

Why Do the Human Genome Project?

By Dr. Robert G. Martin

Would someone please explain to me why the United States government and the National Institutes of Health have committed themselves to the human genome project? It's not that I have trouble comprehending the science. And it's not that I haven't done my homework. I've read the relevant literature: *Science*, *Nature*, *Time*, *Newsweek*, *The New York Times*, etc. I've even spoken with some of those directing the project.

My problem is not too few answers, but too many. I've heard it argued that the information obtained from this project will lead to major advances in medicine. Others who are less sanguine about the medical implications assure me that fundamental new biological understanding will result.

I've heard it suggested that we need the human genome project to get more funding for science in general; that it will engage the public imagination. That's what President Kennedy successfully accomplished with the space program and what President Nixon unsuccessfully attempted with the War on Cancer.

I've even heard it asserted from my more cynical colleagues that the real reason for this project is that too much of the biomedical research dollar is being spent on applied work and the project will divert funds back to basic research where it is most sorely needed.

Without doubt there is a great deal of outstanding work currently underway that will enormously facilitate genomic mapping. But this work was funded before the project got under way and it will continue

to be funded because it is outstanding. Why does it need special priority?

The understanding and possibly the treatment of major health problems like cystic fibrosis would certainly be advanced by locating the responsible gene. But this, too, is underway without the genome project (See story in this issue).

As a long range goal, gene therapy will require the kind of information that the human genome project will yield. But there is no possibility of extensive gene therapy—even on single gene diseases—in the immediate future. Why the race to complete the mapping of the human genome in 5 years?

To my mind, the most compelling reason for the project is to make possible the study of multi-gene disorders such as schizophrenia, for which current genetic tools are inadequate. But if this is the reason for the project, I, for one, doubt

that the American public has been adequately educated or convinced.

It's not that I object to the human genome project per se—I'm certainly willing to be converted. My difficulties are not scientific, they are political.

Frank Press, president of the National Academy of Sciences, has forcefully argued that scientists must assist in setting priorities. He reasons that research funds are, and will remain, limited. I find that difficult to challenge.

Oh, I know that the entire federal science budget only amounts to about 0.5 percent of the gross national product; and an estimated 3 billion dollars over 20 years is a drop in the bucket. But *glasnost* and reductions at the Department of Defense notwithstanding, I don't believe that a significant increase in the real dollar expenditure for basic science is a high priority for the American public.

My concern is not only whether those who favor the human genome project have adequately explained



Dr. Robert G. Martin

why they wish to stress this project over others—statements I have seen quoted to the effect that, “Who could oppose this project on scientific grounds?” certainly haven’t to my satisfaction—but what the broader effect of insufficient public justification and clarification will be on all scientific effort?

Consider for a moment how one would recognize when the American public had reached the conclusion that the federal expenditure for research was too large. I suggest that this would be manifest not by a coalition of rational opponents favoring one or another worthwhile public project, for example, expansion of grants to the arts or humanities in preference to the sciences. Rather, it would come slowly and insidiously as a growing wave of antiscience sentiment. It would be confused, it would be angry, it would be irrational. It would be cloaked in terms of moralistic and ethical superiority.

That is what is upon us now. That’s why we have congressional committees overzealously investigating trivial scientific disputes, mislabelling them as examples of fraud; why we have nature freaks who would outlaw all pesticides although natural pesticides are often more prevalent and dangerous to the human population; why we have hysterical individuals claiming to be the only “true environmentalists” because they oppose all forms of recombinant DNA technology; and partly why we have the rapid growth of animal rights opposition to research. It is also why there has been a growing fascination with the occult; why the wife of an acutely “tuned in” president consulted with her astrologer perhaps as frequently as he did with his science advisor; and why universities throughout the

United States are suffering from a decline in the number of students majoring in the sciences.

It is my thesis that we, the scientific community, are ultimately responsible for this wave of anti-science feeling. For years we have gone to the public through its elected representatives and asked for support. We have been careful not to claim we were about to cure cancer or diabetes or Alzheimer’s disease. But when the media or the Congress became confused and implied or inferred that we were, we made precious little attempt to correct them. When a real moral issue arose—the animal rights question—the National Academy of Sciences responded with a document that is scientifically weak, morally inane and politically makes the Dukakis campaign committee look like giants.

Our first and foremost responsibility is to teach. There can be no meaningful dialogue with a scientifically illiterate community. (We’ve tried—but not hard enough. I recall in the early 1960’s when Arthur Kornberg came to the National Institutes of Health and delivered a public lecture in which he expounded upon the incredible amount of information in the human genome and its minute size. It was, he explained, “as if we could microfilm all of the information in the Encyclopedia Britannica onto something the size of the head of a pin.” The next morning the *Washington Post* dutifully reported that scientists had developed a camera for photographing the encyclopedia on the head of a pin. We must not be discouraged.)

I do not deny that mapping the human genome is worthwhile. I do question whether there is justification for the urgency it is receiving.

More seriously, I feel there’s a negative side to the human genome project that I fear will come back to haunt us if it is not forthrightly discussed with the American public. Let’s face it. In the short term, the primary use of the information that will be obtained from the project will be for the diagnosis of inborn errors of metabolism which have no cure. Put more bluntly, the main use of this information will be to advise when abortion should be encouraged. Although I may favor abortion in these circumstances, I recognize that others do not.

What I feel is needed is a clear statement of why this project is important—more important than a host of other worthwhile projects. The funding for this project is not going to come exclusively from new funds any more than the War on Cancer was funded entirely by new sources.

Until and unless I am convinced not only that this project is scientifically important—I am already so convinced—but also rates the highest of priorities and possible public opprobrium for the use the information it generates will be put to, I simply cannot fathom the haste.

Please, convince me I am wrong.

Dr. Martin is chief of the microbial genetics section in the Laboratory of Molecular Biology, NIDDK.

Dr. James D. Watson, NIH associate director for human genome research, declined to respond to the essay at this time. We hope to have a response and letters, pro and con, in the next *Update*.

NIHAA Forum

What's The Big Hurry?—Thoughts on the Human Genome Project

By Dr. Bernard D. Davis

I have no fundamental disagreement with Robert Martin's discussion of the human genome project, and so I cannot offer a sharp counterpoint. But there are differences in emphasis.

First, it seems important to note how much the project has shifted its goal, without changing its title. When it first burst on the scene as a novel, large-scale enterprise for the Department of Energy, we were told that the goal was urgent because the resulting database would advance the many applications of genetics to medicine by speeding up our localization of each newly discovered gene. In addition, 98 percent of the human genome at present appears to be "junk," in the sense that we have no basis for linking it to function; and by applying molecular genetics in the mode of natural history (i.e., looking to see what is there rather than to answer a specific question) we should develop insights into this huge terra incognita. Above all, a program of sequencing the human genome serially, from A to Z, would be a more cost-effective way of reaching the goal than our present approach: sequencing regions of specific interest and eventually filling in the gaps.

But one might ask how large a fraction of the unknown territory would have to be explored in order to provide most of the benefits of sequencing. Moreover, while the difference between a partial and a

complete sequence of a functional unit, such as protein, is very important for its further study, with a collection of functional (and possibly nonfunctional) units like the human genome, completing a sequence does not seem to have nearly so compelling a benefit. Indeed, as a major scientific goal it seems more symbolic than real.

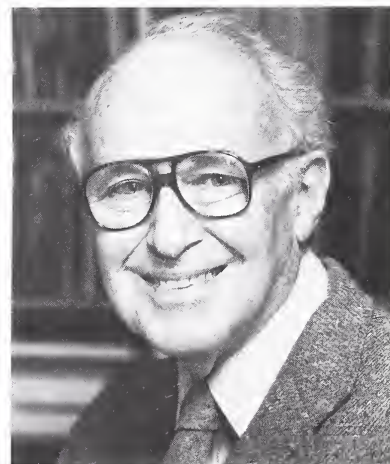
Perhaps the strongest argument for a crash program is not scientific but political: the populace will willingly provide money for a scientific project when it seems a dramatic goal, similar to that of winning in sports. But as we have already seen with other crash projects, that is a dangerous game unless the payoffs are really large and rapid. Moreover, as this project grows, its funding will surely be primarily competitive rather than additional.

How has the genome project evolved? A National Academy of Sciences committee decided early, and wisely, that the cost of pursuing the initial Holy Grail of a complete sequence would at present be too expensive. Instead, it advocated a program that would make the physical and genetic maps more detailed, would sequence regions of particular interest and would expand research on the techniques of sequencing; exhaustive sequencing will be indefinitely postponed until it becomes much cheaper. These recommendations seem to be generally accepted as the current program.

So I must ask: how does this program differ, except in scale, from what we would be doing without it? For unless its specific benefits are spelled out, and the justification for urgency are convincing, biomedical scientists working in other areas will surely become increasingly critical. Is

the goal scientifically any more pressing than any number of other goals in the biomedical sciences? Indeed, because we cannot experiment freely with man, would not sequencing the genome of *Drosophila* or the mouse be more likely to lead to yet unknown principles? Above all, with the funding of approved RO1 grants now threatening to drop as low as 12 percent, will not most of the biomedical research community become bitter at seeing one area meanwhile being force-fed?

Accordingly, while Martin predicts a backlash in the public, I see the greatest reaction coming from the scientific community. At the same time, I agree with his general feeling that antiscience sentiment in the public is growing. But in addition to the causes that he notes, I would add some others: extrapolation from the real social costs of various physical technologies to hypothetical dangers from genetic manipulation; fear that we do not have the wisdom to adjust our behavior rapidly enough to the march of technology; resentment at the arcane knowledge and the power of scientists; and uneasiness as scientific findings contradict many treasured



Dr. Bernard D. Davis

preconceptions about human origins and nature. The genetic revolution is adding to all the problems.

I thus suggest that, if the human genome project does begin to generate public concern, the cause may be less its failure to live up to its promises than fear of these promises. And I'm not sure I agree with Bob Martin that the scientific community could have averted antisience sentiment by explaining its actions better. I suspect that the conflicts are to some degree inevitable. On the other hand, we're not obligated to make things worse! A distinguished molecular geneticist was quoted last year as saying, "When we have the whole human genome sequenced, we will really know what human beings are." I could not blame any humanist who might feel compelled to try to save the world from such people.

I would suggest that scientists, in communicating with the public, should emphasize the limits of their powers as well as the promise. For example, the ability to manipulate DNA *in vitro* at will does not mean that we can manipulate organisms without limit: evolution has required that the parts fit each other. To the extent that the public has the illusion of unlimited manipulation, the hoopla over the human genome project may increase its fears more than its hopes.

It would be nice to know whether the project is more than simply an acceleration of what we would be doing anyway, and what specific benefits make it urgent. And since Congress likes big, visible projects, it would also be nice to feel that the scientists responsible for this one will be willing to press for restraint and balance in funding.

Dr. Davis is professor emeritus of bacterial physiology at Harvard Medical School and a recent Fogarty Scholar-in-Residence at NIDDK.

CALENDAR

OCTOBER—DECEMBER

An exhibit on "Medicine and the Naturalist Tradition: An Exhibition of Medically Related Materials from the Collections of the NLM" is on display in the NLM lobby (Bldg. 38 on the NIH campus) through December 31, 1989. For more information call (301) 496-5405.

NOVEMBER—MARCH

The Foundation for Advanced Education in the Sciences will present several concerts in its 1989-90 Chamber Music Series.

November 12, 1989

Trio D'Archi Di Roma

December 17, 1989

Beaux-Arts Trio

January 28, 1990

Micha Maisky—Cello

February 11, 1990

Bartok Quartet

February 25, 1990

Andras Schiff—Piano

March 18, 1990

New York Chamber Soloists

The concerts will be held on Sundays at 4 p.m. in Masur Auditorium, Bldg. 10. For further information about tickets call 496-7976.

NOVEMBER

G. Burroughs Mider Lecture

November 15, 1989—3 p.m.

Masur Auditorium, Bldg. 10

Speaker:

Dr. Gary Felsenfeld

Chief, Section on Physical Chemistry

Laboratory of Molecular Biology

National Institute of Diabetes and

Digestive and Kidney Diseases

Title: "Switching Globin Genes On and Off: Chromatin Structure and Gene Expression"

November 29-30, 1989—7:30-5:30 p.m.

Masur Auditorium, Bldg. 10

Frontiers in Basic Sciences Symposium "Thrombolysis" (NHLBI)

DECEMBER

NIHAA Fall Meeting

December 6, 1989—5-8 p.m.

the Cloister, Bldg. 60

Speaker:

Dr. Purnell W. Choppin

President, Howard Hughes Medical Institute

For more information, call (301) 530-0567.

JANUARY

The NIH Lecture

January 17, 1990—3 p.m.

Masur Auditorium, Bldg. 10

Speaker:

Dr. Michael S. Brown

Paul J. Thomas Professor of Genetics
Department of Molecular Genetics
The University of Texas Southwestern
Medical Center at Dallas

FEBRUARY

The R. E. Dyer Lecture

February 14, 1990—3 p.m.

Masur Auditorium, Bldg. 10

Speaker:

Dr. Malcolm A. Martin

Chief, Laboratory of Molecular
Microbiology

National Institutes of Allergy and
Infectious Diseases

For more information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.

NIH Notes for January-August 1989

HONORS AND AWARDS

Dr. Stuart A. Aaronson, chief of the Laboratory of Cellular and Molecular Biology, NCI, was honored with a share in the 1989 Paul Ehrlich and Ludwig Darmstaedter Award for "Outstanding scientific accomplishments in the area of oncology and growth factors during the development of cancer." ... **Dr. Richard H. Adamson**, director of NCI's Division of Cancer Etiology, received the Arnold J. Lehman Award from the Society of Toxicology for his multidisciplinary research and management skills, which have contributed to the application of sound scientific principals in chemical regulatory activities ... **Dr. Gilbert Ashwell** of NIDDK's Laboratory of Biochemistry and Metabolism has received the Senior U.S. Scientist Award from the Alexander von Humboldt Foundation of the Federal Republic of Germany in recognition for his work on the asialo-glycoprotein, a receptor found only on liver cells ... **Dr. Edwin D. Becker**, chief of the nuclear magnetic resonance section in the Laboratory of Molecular Biology, NIDDK, received the Bicentennial Medal from Georgetown University in "grateful recognition of his long and fruitful dedication to Georgetown University, to the welfare of the nation, and to the progress of science" ... **Dr. Louise A. Brinton**, chief of NCI's environmental studies section, Environmental Epidemiology Branch, named president-elect of the Society for Epidemiologic Research ... **Dr. Arnold Brossi**, chief of NIDDK's section on medicinal chemistry in the Laboratory of Chemistry, won the 1988 Charles Mentzer Prize of the Société Chimie Thérapeutique for his distinguished accomplishments in medicinal chemistry ... **Dr. Herbert C. Brown**, a Nobel laureate and longtime NIGMS grantee, received the Order of the Rising Sun, Gold and Silver Star from the Emperor of Japan. This award is the highest honor that can be given to a foreign scientist by the Japanese ... **Suzanne Burgess**, NIAMS clinical research nurse on the Clinical Center's 9 East patient care unit, winner of the 1989 Mabel May Wagner Award, the highest award given to PHS nurses ... **Dr. David G. Cogan**, senior medical officer in NEI's Clinical Branch, received an honorary doctor of science

degree from Duke University for his contributions to the field of ophthalmology ... **Dr. Lois K. Cohen**, assistant director for international health, and chief of planning, evaluation and communications at NIDR, awarded an honorary doctor of letters from Purdue University, her alma mater, for "her achievements in research and her commitment to public service." She is the first sociologist to receive an honorary degree from Purdue ... **Dr. Kenneth Croen**, medical staff fellow in NIAID's medical virology section, received an ICAAC Young Investigator Award by the American Society of Microbiology for his research on two herpes viruses ... **Dr. John L. Decker**, Clinical Center director, won the American College of Rheumatology 1989 Medal for his major contributions to the field of rheumatology ... **Dr. Lawrence R. Deyton**, chief, community research section in the AIDS program, NIAID, received the National Lesbian and Gay Health Foundation's 1989 Diego Lopez Award for Outstanding Achievement in AIDS Services ... **David S. Dwyer**, management analyst in DRG's Office of Administrative Management, honored for his work with the Bethesda-Chevy Chase Rescue Squad, specifically celebrating his 20th year as chief ... **Dr. Ronald Dubner**, chief of the Neurobiology and Anesthesiology Branch, NIDR, chosen as the recipient of the Bristol-Myers Award for Distinguished Achievement in Pain Research. He was also the winner of a fellowship from the Japan Society for the Promotion of Science to conduct research in Japan for 1 month ... **Evelyn Farinas**, Clinical Center pharmacist, elected president of the D.C. Society of Hospital Pharmacists, a 300-member regional chapter of the American Society of Hospital Pharmacists ... **Dr. Anthony S. Fauci**, director of NIAID and NIH associate director for AIDS research, received several awards: AAAS/Westinghouse Award for Public Understanding of Science and Technology, the Surgeon General's Exemplary Service Medal and the Surgeon General's Medallion. He also shared the 1989 Duke University Award for Excellence in Immunologic Research with **Dr. Sheldon M. Wolff**, who was NIAID clinical director from 1968 to 1977 and is now Endicott professor and chairman of Tufts School of Medicine in Boston. The two were cited as "major forces in the development of immunologic research."

... **Dr. Joseph A. Frank**, director of magnetic resonance research, diagnostic radiology department, Clinical Center, led a research team that won a certificate of merit for the scientific exhibit, "Assessment of Normal and Abnormal Renal Function with Gd-DTPA-Enhanced Dynamic MR Imaging," presented at the 74th Scientific Assembly and Annual Meeting of the Radiological Society of North America held in Chicago ... **Dr. Robert Gallo**, chief of NCI's Laboratory of Tumor Cell Biology, and **Dr. Ada Sue Hinshaw**, director of the National Center for Nursing Research, were elected members of the Institute of Medicine of the National Academy of Sciences ... **Dr. Ralph J. Helmsen**, currently research training and resources officer for NEI, received the Cornea Section Award at the annual meeting of the Association for Research in Vision and Ophthalmology ... **Dr. James Joseph** and **Dr. George Roth** of the molecular physiology and genetics section of NIA's Gerontology Research Center won the 1989 Sandoz Prize for Gerontological Research from the International Association of Gerontology for their work on the role of calcium mobilization in altered signal transduction in the nervous system ... **Dr. Martin Kamen**, a scholar-in-residence at the FIC, received the John Scott Award for his discovery and isolation of carbon-14 ... **Dr. Stephen I. Katz**, chief of NCI's Dermatology Branch, has been named Sulzberger professor of dermatology at the F. Edward Hebert School of Medicine of the Uniformed Services University of the Health Sciences (USUHS). He will combine the Sulzberger professorship with his current NIH position ... **Dr. David M. Kingsley**, a postdoctoral investigator in the mammalian genetics laboratory of the Basic Research Program at the Frederick Cancer Research Facility, is winner of the 1989 Lucille P. Markey Scholar Award in Biomedical Science. The award will support his research on the isolation and sequencing of the short-e gene of the mouse ... **Dr. Richard Klausner**, chief of NICHD's Biology and Metabolism Branch, delivered the Presidential Lecture at the annual meeting of the Endocrine Society on June 21 in Seattle. The society honored him for his fundamental contributions to the understanding of RNA regulatory elements ... **Dr. John H. Klippel**, NIAMS clinical director, was honored by the American Lupus Society when it inducted him into the National Lupus Hall of Fame for his research in the area of systemic lupus erythematosus ... **Dr. Ronald L.**

Levin of the Biomedical Engineering and Instrumentation Branch, DRS, has received the Washington Academy of Sciences 1989 Award for Scientific Achievement in Engineering for his comprehensive analytical and experimental advances in bioheat transfer ... **Madeleine M. Lindahl**, an advanced clinical nurse at the Clinical Center, has been named 1989 Maryland Hospital Nurse of the Year. In 1988, she was named "Nurse of the Year" at NIH for outstanding practice in a research environment ... **Dr. Lance Liotta**, chief of the Laboratory of Pathology, Division of Cancer Biology, **Dr. Charles Myers**, chief of the Medicine Branch, Division of Cancer Treatment, and **Dr. Steven A. Rosenberg**, chief of the Surgery Branch, Division of Cancer Treatment, NCI, awarded \$50,000 each from the Milken Family Foundation of California for their work on cancer research ... **Dr. Donald A. B. Lindberg**, NLM director, received the Surgeon General's Medallion. Also honored at NLM with the Surgeon General's Exemplary Service Award were **Margaret M. Kaiser**, **Peter B. Hirtle**, **Lucinda H. Keister**, and **Dr. John L. Parascandola** of the History of Medicine Division, NLM ... **Dr. James E. Mosimann**, chief of the Laboratory of Statistical and Mathematical Methodology, DCRT, received the University Faculty Award from American University for outstanding teaching in an adjunct appointment ... **Dr. John J. Mulvihill**, chief of the clinical genetics section, NCI, recipient of the 1989 Freidrich von Recklinghausen Award from the National Neurofibromatosis Foundation, Inc. He was recognized for his work as editor of the foundation's quarterly *Research Newsletter* ... **Linda Nee**, an NINDS genetic research associate, was honored by the Greater Washington Chapter of the Alzheimer's Disease and Related Disorders Association with a "1988 Researcher Award" for her work on familial Alzheimer's disease ... **Dr. Abner L. Notkins**, director of NIDR's intramural research program, received the Solomon A. Berson Medical Alumni Achievement Award from New York University School of Medicine. A 1958 graduate of the school, he won the Berson award in basic science. Last year, **Dr. Sheldon G. Cohen** of NIAID won the Berson award for health science ... **Dr. David P. Rall**, director of NIEHS, received the Distinguished Service Medal from the Institute of Occupational Health, Helsinki, for his work in occupational health and safety and for his contribution to the development of occupational health in Finland ...

Dr. John B. Robbins, chief of the Laboratory of Developmental and Molecular Immunity, NICHD, delivered the annual Louis Weinstein Lecture at Tufts and he was honored there for his vaccine work ... **Dr. Jesse Roth**, NIDDK scientific director, received an honorary doctoral degree from the University of Rome in recognition of his research on insulin receptors and peptide hormones ... **Dr. Harry A. Saroff**, scientist emeritus in NIDDK's Laboratory of Biochemical Pharmacology, was honored by his colleagues on the occasion of his 75th birthday with a symposium on Mar. 8 titled "The Physical Chemistry of Proteins: 75 Years of Research." He came to work at NIDDK 40 years ago as a research chemist and his primary interest has remained protein chemistry. He retired from the PHS Commissioned Corps 11 years ago as a scientist director. He then became a scientist emeritus and special expert for NIDDK ... **Dr. M. James Scherbenske**, director of the renal physiology/cell biology program of the Division of Kidney, Urologic, and Hematologic Diseases, NIDDK, received the American Society of Nephrology's Special Recognition Award for his service to the nephrology community during the past 20 years ... **Dr. James Shelhamer**, senior investigator with the CC's critical care medicine department, was honored as the hospital's Clinical Educator of the Year ... **The DeWitt Stetten, Jr. Museum of Medical Research** won the John Wesley Powell Prize, a biennial award given by the Society for History in the Federal Government, in recognition of the museum's series of five exhibits entitled, "Windows into NIH History: A Centennial Retrospective." It was the first time an exhibit concentrating on the history of science in medicine has won the award. The exhibit, showing major research advances by NCI, NIDR, NHLBI, NIAID, NIMH and NINDS, is located in the CC lobby ... **Dr. DeWitt Stetten, Jr.**, NIH deputy director for science emeritus, was honored with a symposium on the molecular basis of disease held April 30 in Masur Auditorium. A luncheon celebrating his birthday was held following the series of talks. An exhibit, "DeWitt Stetten, Jr., M.D., Ph.D: Scientist, Administrator, Humanist," has been mounted in the CC lobby ... **Dr. James B. Wyngaarden**, 12th director of NIH, named the winner of the 1989 FASEB Public Service Award for his "superb performance" and his "dedication to advancing the nation's biomedical research efforts."

APPOINTMENTS AND PERSONNEL CHANGES

Dr. James E. Balow, chief, kidney disease section, NIDDK, has been named clinical director of NIDDK. He has been acting clinical director for the institute since August, 1988 ... **Stephen Benowitz**, appointed Oct. 24, 1988, as director of the Division of Personnel Management. He came to NIH from the Department of Treasury, where he was personnel director ... **Dr. Gerald J. Chader** appointed director of the intramural research program at NEI. He joined NEI in 1971 as a research chemist and in 1982 was named chief, Laboratory of Vision Research ... **Dr. George W. Counts**, an authority on infectious diseases, named head of the new Clinical Research Management Branch in the Treatment Research Program of the Division of AIDS, NIAID. Prior to joining NIAID, he was professor of medicine at the University of Washington in Seattle, where he had been on the faculty since 1975 ... **Dr. Joseph W. Cullen**, deputy director of the Division of Cancer Prevention and Control, NCI, left July 1 to become head of AMC Cancer Research Center, Denver ... **Dr. George Curlin** has been appointed deputy director of NIAID's Microbiology and Infectious Diseases Program. An internationally known expert in enteric infectious disease, he is rejoining NIAID after a 5-year stay with the Agency for International Development during which he managed the inter-agency agreement between PHS and AID in vaccine development and testing ... **Dr. Darla Danford**, appointed director of the Division of Nutrition Research Coordination in the Office of Disease Prevention, OD. She will also serve as chairperson of the NIH Nutrition Coordinating Committee ... **Dr. Nirmal K. Das**, executive secretary of the Allergy, Immunology and Transplantation Research Committee, NIAID, left in July to assume position of director, university-wide programs, Office of Health Affairs, University of California, Berkeley ... **Dr. Felix de la Cruz** appointed chief, Mental Retardation and Developmental Disabilities Branch (MRDDB) in the Center for Research for Mothers and Children, NICHD. Prior to his appointment, he served as special assistant for pediatrics and more recently as acting chief, MRDDB ... **Dr. Howard B. Dickler** chosen chief of the Clinical Immunology Branch in the Division of Allergy,

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Immunology, and Transplantation, NIAID. An authority on immunology, he had worked since 1974 as a senior investigator in NCI's Immunology Branch ... **Linda S. Dugger**, named Federal Women's Program manager in NIH's Division of Equal Opportunity. Her goals are to facilitate and increase awareness at NIH about women's issues, networking and career goals ... **Dr. Stephen R. Fahnstock** appointed program administrator in the Genetics Program, NIGMS. Prior to joining NIH he was with Genex ... **Dr. William T. Friedewald**, the first associate director for disease prevention, OD, resigned his post and retired from the Commissioned Corps, PHS, Aug. 31, to become chief medical director at Metropolitan Life Insurance Co. in New York City ... **Dr. Muriel I. Kaiser** named chief of the newly formed Ophthalmic Genetics and Clinical Services Branch, NEI. She had been head of NEI's section on ophthalmic genetics and pediatric ophthalmology in the Clinical Branch ... **Dr. Edward D. Korn**, chosen scientific director of the intramural research program at NHLBI ... **Dr. David J. Lipman**, a former medical staff fellow at NIH, named first director of the National Center for Biotechnology Information at NLM ... **William T. Magers**, a 16-year veteran of the NIH Fire Department, Emergency Management Branch, appointed NIH fire chief ... **Dr. George R. Martin** chosen scientific director for the National Institute on Aging. He joins NIA after 14 years as chief of NIDR's Laboratory of Development Biology and Anomalies ... **Dr. Michael E. McClure** appointed chief, Reproductive Sciences Branch, Center for Population Research, NICHD. He joined NICHD in 1979 as a health scientist administrator in the Reproductive Sciences Branch and most recently headed the branch's Reproductive Genetics and Immunology Program ... **Dr. Daniel Nixon**, associate director for cancer prevention research program, Division of Cancer Prevention and Control, NCI, left in July to become vice president for professional education at the American Cancer Society, Atlanta ... **Dr. Paul C. Rambaut**, deputy director of NCI's Division of Extramural Activities, named deputy assistant secretary general for scientific and environmental affairs at the North Atlantic Treaty Organization. For his period of service in Brussels, he has been appointed a foreign service officer in the U.S. State Department. When his tour is complete (3-5 years) he will return to NIH ... **Harvey W. Rogers**, chief of the Environmental Protection

Branch, DS, since 1986 and an NIH environmental engineer since 1974, transferred to the newly formed PHS Agency for Toxic Substances and Disease Registry in Atlanta ... **Dr. Michael Rogers** has joined the staff of the Pharmacological Sciences Program at NIGMS. He has had a long association with NIH as a staff fellow, an expert consultant, and most recently as the executive secretary of the bioorganic and natural products chemistry study section of DRG ... **Dr. W. Sue Shafer** named associate director for program activities at NIGMS. She came to NIH in 1974 as a health scientist administrator in the Cellular and Molecular Basis of Disease Program, NIGMS. Since 1987 she has been with NIAAA ... **Dr. Philip H. Sheridan** named chief of the Developmental Neurology Branch in NINDS's extramural Division of Convulsive, Developmental and Neuromuscular Disorders. He has been with NINDS since 1982 ... **Dr. Barbara A. Underwood**, who was special assistant to the director for nutrition research and international programs, NEI, has been reassigned to be assistant director for international program activities in the newly created Office of International Program Activities, OD, NEI. **Terrence Gillen**, who was chief of the policy, legislation, planning and evaluation section, NEI, has been reassigned as deputy assistant director for international program activities. He will also be NEI's international program liaison officer ... **Dr. Sten Vermund** named chief of the Epidemiology Branch in the AIDS program of NIAID. Before coming to NIH, he was assistant professor of epidemiology and social medicine and pediatrics at Albert Einstein Medical College, Bronx, N.Y. He was also visiting medical professor at City University of New York Medical School and adjunct assistant professor of public health (epidemiology) at both Columbia University and Cornell University Medical College ... **Dr. Judith N. Wasserheit** named chief of newly created Sexually Transmitted Diseases (STDs) Branch, NIAID. Prior to joining NIAID, she was assistant professor of medicine in the division of infectious diseases at Johns Hopkins University School of Medicine. She was also medical director of the Druid STD Clinic and assistant chief of STD Clinical Services for Baltimore City Health Department ... **Dr. James B. Wyngaarden**, NIH director since Apr. 30, 1982, left NIH on July 31. NIH deputy director **Dr. William F. Raub** named acting director of NIH until a thirteenth director of NIH is selected.

RETIREMENTS

Dr. William Adelman, chief of the NINDS Laboratory of Biophysics since 1971, has retired after a 34-year career in scientific research. He plans to continue his association with the Woods Hole Marine Biological Laboratory when he moves to Falmouth, Mass., but his chief activity will be to paint ... **James Augustine**, public information officer, DRR, retired Dec. 30, 1988, after 30 years of federal service. He joined DRR in 1966 and during his years there produced hundreds of communications projects for DRR programs and resources ... **L. Thomas Byrd** retired from the Clinical Center's clinical pathology department on Feb. 24 after more than 32 years of government work, 30 of which were spent in that department ... **Dr. W. Emmett Barkley**, director of the Division of Engineering Services, OD, retired from NIH on Mar. 31 after 28 years of service in the PHS Commissioned Corps. He has joined Howard Hughes Medical Institute as director of laboratory safety ... **Dr. William Gay**, director of the DRR Animal Resources Program since 1980, has retired after working more than 34 years at NIH. He will continue to work as a private consultant in laboratory animal and health related areas ... **Phyllis Hansen**, protocol assistant in the Office of the Director, Clinical Center, retired after 30 years at NIH ... **Wilma A. Kline**, a grants clerk in the NIGMS Biophysics and Physiological Science Program, retired after 27 years of government service; 11 were with NIGMS and 7 with NCI. She was also active in the R&W, serving as a member of its board of directors ... **Marge Leibold**, a receptionist at NIDR's dental clinic for 18 years, retired Mar. 30 ... **John Mason**, chief of the mechanical instrumentation fabrication section of the Biomedical Engineering and Instrumentation Branch, DRS, retired after 31 years at BEIB; he was a federal employee for 37 years ... **June McCalla**, clinical nurse specialist at the Clinical Center, retired June 30 after a 36-year career at NCI's Pediatric Branch. She started working there in 1953 when the CC opened and she was NCI's first pediatric nurse practitioner ... **Dr. Marie U. Nylen**, extramural program director, NIDR, retired July 31. Her NIDR career spanned 40 years and she made many contributions and discoveries in dental research. In 1977, she became the first woman to head an intramural program at NIH when she was named scientific

director of NIDR ... **Dr. David M. Renquist**, chief of the animal center section, VRB, DRS, at Poolesville, has retired from the PHS Commissioned Corps to become head of the division of veterinary science at the Primate Research Institute, Almagordo, New Mexico ... **Nancy Shapiro**, Fogarty International Center's conference management assistant, retired June 30 after 33 years of federal service. She joined NIH in 1971 and moved to the Fogarty Center in 1975, where for 14 years she managed many conferences ... **Donald H. Spence**, electrician leader in the Clinical Center's maintenance section, has retired after 36 years of government service. Twenty-eight of those years were spent at NIH; 22 working in Bldg. 10. He is retiring to Prosperity, S.C., with his wife Linda, who retired from the CC director's office more than 2 years ago ... **Dr. Elizabeth K. Weisburger**, NCI assistant director for chemical carcinogenesis, retired Jan. 1 after 39 years at NIH ... **Albertha Wheeler**, retired after 34 years at NIH. For the last 16 years she worked in the NIH Committee Management Office ... **Jeanne R. Winnick**, a public information specialist in NIAID's Office of Communications, has retired after 37 years in federal service. She came to NIH in 1972 as a secretary in the Office of Communications and became a specialist in handling public and congressional inquiries ... **Dr. William E. Wright**, senior staff periodontist in the Clinical Investigations and Patient Care Branch, NIDR, and an officer in the Commissioned Corps, retired Mar. 1. He served in the PHS for 24 years, 17 at NIDR. His research focused on periodontal diseases and the oral side effects of chemotherapy and radiation.

DEATHS

Mark W. Bell, a former NIH employee, died at the Washington Hospital Center on Feb. 5. He retired from NICHD in March 1986 as senior contracting officer after working at NIH for 20 years ... **Dr. Bernard Beryl "Steve" Brody**, 80, a pioneer in drug therapy development, died Feb. 28 of cardiac arrest at his home in Charlottesville, Va. He was founder and chief of the Laboratory of Chemical Pharmacology at the National Heart Institute. He was a major figure in the field of modern pharmacology. He said his most important discovery was that human and animal responses to drugs did not differ significantly. After his retirement in 1970 from NIH he was a

senior consultant with Hoffman-La Roche laboratories and professor of pharmacology at Pennsylvania State University College of Medicine, and a research consultant and lecturer at George Washington University ... **K. Dorothy Calnan**, 84, a research biologist at NCI from the 1940's until she retired in 1970, died of cardiac arrest Aug. 22 at Mount Vernon Hospital in Alexandria ... **John Buckner Debnam**, 68, a firefighter with NIH's Fire Department for 23 years before retiring in 1978 as assistant fire chief, died Aug. 11 of cancer at Washington Adventist Hospital, Takoma Park ... **Loretta Edmonston**, 75, a budget analyst at NIH, died Mar. 23 at Shady Grove Adventist Hospital ... **Dr. Arlan J. Gottlieb**, 55, chief of hematology at State University of New York Health Science Center at Syracuse, died June 14 at his home after a year-long battle with lymphoma.

From 1962 to 1967 he was a research fellow at NIH. He also served on various review committees at NCI related to cancer trials ... **Ada Ruthellen Hruska**, 63, a nurse analyst with the Clinical Center's information systems department, died Jan. 23. Her 34-year career mirrored the growth of NIH from a small campus to a huge complex. She also was involved in the CC's transition to a computerized medical information system ... **Dr. John Roderick Heller, Jr.**, 84, director of NCI from 1948 to 1960 and president and chief executive officer of Memorial-Sloan Kettering Cancer Center from 1960 to 1964, died in Bethesda, May 4 of a stroke. During his tenure as NCI director, progress was made in the acceptance of cancer chemotherapies and the groundwork was established for the virus cancer research program ... **Stanley J. Kissel, Jr.**, (continued on p. 12)



Late this spring, two congressional figures died who for decades had supported and championed NIH. On May 20, former U.S. Senator Warren G. Magnuson (D-Wash.), 84, died in Seattle of congestive heart failure as a complication of diabetes. Ten days later, May 30, U.S. Rep. Claude D. Pepper (D-Fla.), 88, died of stomach cancer at Walter Reed Army Hospital. Both men had played leading roles in the legislative history and growth of NIH. In 1937 as a freshman congressman, Magnuson introduced his first bill—the National Cancer Institute Act, which established NCI. Pepper, then a U.S. Senator, also sponsored the 1937 Act creating NCI. Later on in their congressional careers they continued their support: Magnuson chaired committees overseeing NIH appropriations and Pepper sponsored legislation creating all but one NIH institute. To commemorate their contributions to biomedical research, two buildings at NIH have been renamed in their honor. On Oct. 22, 1981, the NIH research hospital was rededicated as the Warren Grant Magnuson Clinical Center and on May 10, 1989, Bldg. 31 (above), the largest administrative building at NIH, was renamed the Claude Denson Pepper Building.

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52, chief of the social work department at the Clinical Center, died May 18 following heart surgery at Walter Reed Army Medical Center. He joined PHS in 1962 and in 1980 moved to NIH as chief of the social work department ... **Adrian P. Loftis**, 80, a retired laboratory animal technician for NINDS, died Mar. 10 of cancer in his Washington, D.C., home. He was responsible for the care and handling of laboratory animals and invented a tool for the safe handling of cats ... **Ora Marshino**, 94, information specialist at NCI, died Feb. 7 at Owensboro, Ky. She was a writer in the information office at NCI from its inception until her retirement in the 1960's ... **Robert J. Mayfield**, chief of the Grants Management Branch at NIEHS, died Jan. 18 after a long fight against pancreatic cancer ... **Dr. Charles W. Mays**, 59, a radiobiologist at the Radiation Epidemiology Branch, NCI, died of cancer on Aug. 3 at Washington Hospital Center. He was a specialist in studying cancer risk from exposure to ionizing radiation and he had come to NCI in 1987 ... **Dr. Sidney H. Newman**, a population specialist and behavioral science administrator at the Center for Population Research, NICHD, died of cancer Jan. 1 at his home in Bethesda. He joined PHS in 1947 and in 1968 came to NICHD as the first psychologist at the Center for Population Research. He retired in May 1986 ... **Dr. Edward P. Offutt, Jr.**, 75, a retired science administrator at NIAMD, died of cancer on Apr. 20 ... **Dr. Grant Lister Rasmussen**, 84, a scientist at NIH for 17 years until he retired in 1971 as chief of the Laboratory of Neuro-anatomical Sciences, died May 15 of congestive heart failure at his home in Bethesda ... **Dr. Jose Albert Rivera**, 78, a retired colonel in the Army Medical Corps who worked at NIH from 1965 until 1973 as a scientist-administrator in the National Institute of Neurological Diseases and Blindness, died Aug. 15 of cancer at the Bethesda Naval Medical Center ... **Dr. Morrison Rogosa**, 80, scientist emeritus in the microbial systematics section, Epidemiology and Oral Disease Prevention Program, NIDR, died Mar. 28 of congestive heart failure. His research career spanned more than 50 years. He joined NIDR in 1948 and his major field of research was the isolation, classification and study of oral bacteria ... **Dr. Sanford M. Rosenthal**, 91, the retired chief of the Laboratory of Pharmacology and Toxicology at NIAMD, died of cardiac arrest May 1 at his home

in Potomac. He joined the PHS in 1928 and retired in 1961. In 1931 he developed a liver function test; in 1934, an antidote for mercury poisoning; and in 1937, a treatment for pneumococcal pneumonia. During the early 1950's, he reported the benefits of oral saline solution as treatment for shock resulting from burn injuries. After retiring he remained for several years as a consultant to NIAMD ... **Dr. Robert M. Stephan**, 80, a former scientist in the Oral Medicine Branch, NIDR, died Feb. 26. He advanced dental caries research in 1951 by providing the first rat model for studying tooth decay. He retired from NIDR in 1972 after 26 years of government service ... **Dr. Ulrich Weiss**, 81, a retired researcher at NIAMD and an authority on opium alkaloids, died July 17 at a hospital in Denpasar, Bali, Indonesia, after a heart attack. He collected Native American and Indonesian textiles and was on a trip sponsored by the Smithsonian Institutions, and American Textile Museum when he became ill. He joined NIH in 1951 ... **Joseph G. Whitlock, Jr.**, retired chief of the Telecommunications Branch, Office of Research Services, died of cancer on Jan. 14. He began his 24-year career at NIH in 1965. All his career was spent in the Telecommunications Branch, until his retirement in September 1988 ... **Dr. Bernice Elaine Eddy Wooley**, 85, a pioneer NIH virologist, died of cardiopulmonary arrest May 24 at a hospital in Easley, S.C. She began work at NIH in 1937 and did research on influenza and other viruses. With Sarah Stewart of NCI, she discovered the SE polynoma virus. She also did important testing in relation to polio vaccine development. She retired from NIH in 1972 ... **Dr. Theodore D. Tjossem**, 70, a retired psychologist at NIH, died Feb. 28 of an aortic aneurysm at Arlington Hospital. He was chief of the Mental Retardation and Developmental Disabilities Branch, NICHD, from 1966 to 1987 when he retired ... **Rev. Sidney T. Yancey, Jr.**, 66, pastor of Mount Pleasant Baptist Church in Washington since 1965 and retired biomedical scientist at NIH, died of cancer May 10 at Providence Hospital, Washington, D.C. He came to Washington in 1965 and was a student at Washington Baptist Seminary and an animal caretaker for the Cancer Treatment Division, NCI. In the mid-1960's he became a biomedical scientist at NCI. He worked on projects identifying spontaneous tumors in animals, several of which were named for him. He retired in 1982 and worked as a consultant at NCI until 1985.

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Dr. Edward N. Brandt, Jr., former assistant secretary for health, DHHS, and then president of the University of Maryland at Baltimore is now the executive dean of the University of Oklahoma College of Medicine, Oklahoma City, OK.

John C. Dougall, NICHD associate director for program service from 1962 to 1973, writes: "Since I retired I look back with appreciation for all the helpful information I picked up during those years when the Aging Program was part of NICHD. It has made adjustment to a retirement community that much easier."

Dr. Maxwell Gordon, former pre- and postdoctoral fellow at NIH, writes that he has been "elected chairman of the board and chief executive officer of Lenti-Chemico Pharmaceutical Laboratory, Inc., a subsidiary of the Ajinomoto Company in Tokyo."

Dr. Jane E. Henney, former deputy director of NCI, named vice chancellor for health programs and policy at the University of Kansas Medical Center, Kansas City. She had been associate vice chancellor.

Dr. Caspar W. Hiatt former chief, Laboratory of Biophysics and Biochemistry, Division of Biologics Standards, 1956-67, is now retired and writes that "I have moved ashore after 4½ years of living aboard our 31' sailboat 'Bellatrix' cruising on the East Coast and the Bahamas. We will keep the boat and use it for summer cruises."

Dr. Henry R. Hirsch, NIMH, Laboratory of Neurobiology, 1961-63, and now with the department of physiology and biophysics at the University of Kentucky, Lexington, writes: "My

current research is in theoretical biology, specializing in gerontology and cell kinetics. My latest project is a computer model of waste-limited cell culture growth."

Dr. James F. Hogg, a special volunteer at NHLBI's Laboratory of Biochemical Genetics, writes that "As a result of my first visit to NIH in 1957, Marshall Nirenberg came to NIH to work with DeWitt Stetten. Since then I have visited NIH on various occasions. Now I am learning about this remarkable institution at first hand. Regrettably I have no more students to send."

Maria A. Jakus, who was with DRG, writes, "I hope that future issues of the *NIHAA Update* will include more news about the extramural program—DRG and the study sections and other review panels—since it comprises a rather large chunk of NIH!"

Dr. Nasser Javadpour, who was urologic surgeon from 1972 to 1984, writes: "I was appointed professor and director, section of urologic oncology, University of Maryland School of Medicine in 1984. My research and clinical achievements have been: (1) Development of a continent urinary diversion technique with no stoma after removal of the bladder for invasive cancer. (2) Use of the dye-laser (photodynamic therapy) for superficial bladder cancer with preservation of the bladder."

Edward E. Nicholas, Jr., former NIH director of personnel, OD, writes, "I will finish tenure as manager of Cable Channel 10 in the fall of 1989 and am a new partner in the Nicholas Partnership—consultant in personnel and resource management."

Dr. Michael Otten, who was with the Division of Computer Research and

Technology, 1967-69, writes: "Currently with Inactive Reserve of USPHS, executive with IBM International (World Trade Corp.). Member of the Scarsdale School Board. Served as president and chairman-of-the-board of Green Chimney School and Childrens Services, a \$10 million per year operation supporting emotionally disturbed children in Brewster, N.Y. Adjunct professor at Union of Experimenting Colleges and Universities."

George L. Payne, Office of Director, 1959-79, writes " 'ODD Special Assistant'—that is what the sign on my door said! Since retiring from NIH I have spent most of my time organizing and then managing (as treasurer) the Strathmore Hall Foundation, Inc.—a nonprofit corporation dedicated to operating and developing the Strathmore Hall Arts Center (10 blocks north of NIH on Rockville Pike). The Center, now starting on its 7th operating year, is flourishing far beyond expectations. Several NIH Institutes have used the Center for elegant post-conference receptions."

Dr. Leon S. Smith, senior assistant at NIAID, 1957-59, writes that he is "chairman of medicine at St. Michael Medical Center, Newark, N.J., and professor of medicine, N.Y. Medical School as well as professor of preventive medicine." Four of his five children have become physicians including two in infectious diseases. He is now spending more time with AIDS problem. Chairman of the N.J. Medical Task Force on AIDS, administering grants, clinics and education at St. Michael.

Hilah B. Thomas, who was a writer/editor in the information office at NIGMS and then NIDR from 1960 to 1983, writes: "I keep well and reasonably busy. Usually I take a course at the University of Virginia to keep my

wits working. I swim with my husband in a municipal pool an hour each weekday morning. I garden in a desultory way, and we do some hiking in nearby mountains. We have only 3 more miles to go before finishing our walk along the old C&O Canal towpath; it has been great fun traipsing its 184 miles of river and hills and fields with a few towns thrown in to break the pace from Georgetown to Cumberland. I still miss my work and friends at NIH."

Dr. Gordon D. Wallace, former associate director of intramural research at NIAID, writes, "I am the president of two companies which I founded: Wallace Biotechnology Associates—technology transfer brokering with a focus on federal labs, and Bio-Brite, Inc., where we are developing a portable light dosage system to provide phototherapy for seasonal affective disorder and related conditions, jet lag and swing shift (shiftwork) disorders. This is in cooperation with NIMH."

William J. Walsh, III, who was coordinator for Biomedical Research and Health Affairs at the Department of State, retired after 28 years of federal service and is now "an international economist specializing in the life sciences, biotechnology and export and import of foods and pharmaceuticals." He was elected chairman of the board of Currents International, Inc. in Massachusetts with offices in Boston, Brussels and Washington.

Dr. I. Bernard Weinstein, a clinical associate in the metabolism service at NCI from 1957 to 1959 and now director of the Columbia University Comprehensive Cancer Center, is president-elect of the American Association for Cancer Research (AACR), the world's leading professional

(continued on p. 14)

(continued from p. 13)

organization of cancer scientists. He will become president of the association in May 1990.

Dr. Ann F. Welton, who was a post-doctoral associate at NIH in NIAMD from 1974 to 1977 and who is now the senior director of Allergy and Inflammation Research at Hoffman-La Roche Inc., was recently honored as recipient of the 1989 Tribute to Women and Industry (TWIN) Award for her contributions to industry in New Jersey.

Director (continued from p. 1)

During his first year, Wyngaarden was deluged with courtesy visits from these agencies.

"I started to wonder when they would end so I could get down to doing the director's job."

Lesson three: "Much of the NIH director's job is representational—to the Congress, to the public and to the administration."

Asked the hardest decision he had to make as director, Wyngaarden gives an insight into his values:

"When I appealed to Secretary Bowen to keep Dr. Edwin Becker from being banished from NIH (owing to an investigation by the DHHS inspector general that found irregularities in procurement), I had to go over the heads of everyone above me in the department. It was my most difficult moment. But I'm glad I did it."

Many of Wyngaarden's biggest battles fell into the category of "trying to prevent adverse things from happening." At the root of many of these struggles is NIH's identity: Is it the crown jewel of federal intellectual enterprise or just another government agency?

"I don't think intramural NIH



Dr. Richard C. Greulich (l), former NIA scientific director and Gerontology Research Center (GRC) director, and Dr. George R. Martin (r), current NIA scientific director and GRC director, stand with Dr. Nathan W. Shock, NIH scientist emeritus, for whom the GRC was renamed in dedication ceremonies in June 1989.

can prosper if it is treated like any other government bureaucracy," Wyngaarden said. "NIH is the one shining exception to the blatant mediocrity of most federal laboratories."

"We have tried to operate as much like a university as we can," he continued. "You tend not to find as much federal bureaucracy mind-set here."

Being different has its disadvantages, he allowed.

"We're not looked upon as team players, and in many ways that perception is correct. For example, we have far better relations with Congress than with the administration. As long as I have been here, there have been only two exceptions to a hold-the-line budget mentality. AIDS is one, and that was imposed by an epidemic. The other is the human genome initiative."

Clearly impatient with the bureaucracy, Wyngaarden said it often seems as though "the chief function of all who hold positions

above me in the department is to say no."

Frustrations and all, however, he is happy to have been director.

"I'm very pleased to be here," he said. "I don't regret it for an instant. It has been a very positive experience, but it takes its toll. The pressure is relentless and you have to develop a thick hide."

Wyngaarden says he knew for the past year that the job was wearing him down.

"I knew that I wanted a less pressure packed life from day to day," he said. "Seven and a half years is about the right length of time. I would like to have stayed a little while longer, give or take a few months. President Bush asked me to remain until August 1, which gave the search committee a little longer than if I left July 1 (the date originally reported for his departure)."

The director says his leaving is "a clear sign to NIH that the directorship is political and not immune to

turnover."

Looking at NIH's challenges in the future, he sees "a cultural warp affecting science now, some of which, honestly, is self-imposed. The scientific community has been derelict in stressing the need for animals in biomedical research."

Regarding recent charges of fraud and misconduct in science: "There are bona fide examples of misconduct that have hurt the public's confidence in science. Our enterprise rests on integrity; betrayers of the truth have hurt us a great deal."

NIH has recently established an Office of Scientific Integrity that will oversee claims of misconduct and fraud at grantee institutions. Admitted Wyngaarden, "No human enterprise is run by angels."

Two other looming issues—recombinant DNA research and fears associated therewith, and use of fetal tissues recovered from elective abortion—have further politicized the institutes.

"All of these issues make an impression on Congress," Wyngaarden cautioned. "We need to enlist more support from the public. They need persuading about the benefits of medical research to health. The days of the ivory tower and splendid isolation are over."

Regarding his future, Wyngaarden said, "I've been approached, since announcing my resignation, about an amazing number of things. Most have been university and medical school jobs. But some of them are a little bizarre. Someone called about a job in biological warfare but I didn't return the call."

Wyngaarden estimates that he's been contacted by more than two dozen groups interested in his services.

"I've had two invitations from foreign universities that have been very appealing," he said. "I've had

one feeler about a position in government (not in DHHS). And many major corporations and biotechnology firms have offered me positions on their boards."

Wherever he goes, Wyngaarden wants a forum for his views on public policy.

"There are many issues that need to be addressed—funding, animals in research, misconduct and fraud, conflict of interest, the fear of products derived from recombinant DNA research both in this country and abroad. These problems constitute a major impediment to biotechnology," he said.

Two major groups have asked

him to fill this public policy role—both are based in Washington, though one would involve half-time work in Europe.

"It's essential that we have worldwide harmony on these matters, especially with respect to regulatory issues," he said.

Wyngaarden noted that he has been on leave from Duke University for the length of his directorship and may go back there. Basically, he is seeking a firm base from which to operate.

Whatever he decides to do professionally, Wyngaarden plans to continue hobbies that include skiing, tennis, sailing and art collection.

Principal Accomplishments by Dr. James B. Wyngaarden

- The NIH overall appropriation was doubled from \$3.57 billion in FY 1981 to \$7.3 billion in FY 1989.
- Led the massive research effort against AIDS from its beginning.
- Initiated the NIH Human Genome Research Program and recruited Dr. James D. Watson as its head.
- Played a key role in shaping the emergence of biotechnology on the national and international scene.
- Wyngaarden acted on the premise that the "true engine of science is found in the ideas of the scientists themselves." He took significant steps to minimize the management of research by others than scientists, and to reduce the procedural burdens on investigations. As a result:
 - The number of research project grants increased from about 16,000 in FY 1982 to 20,500 proposed for FY 1990.
 - The proportion of the budget devoted to research project grants increased from 50.3 percent in FY 1982 to 57.6 percent in the budget proposed for FY 1990.
 - The average length of award of research project grants was increased from 3.3 years in FY 1982 to 4.1 years in FY 1988. The proportion of competing research project grant awards that have a project period for 5 years or more has grown from 19.2 percent in FY 1981 to 48.3 percent in FY 1988.
- Strengthened the NIH intramural research program.
 - The FY 1982 intramural budget was \$455 million and the request for FY 1990 is \$849 million.
 - Initiated planning for Consolidated Office Building.
 - Began construction of Child Health and Neuroscience Facility.
- Was active as an influential spokesman for biomedical research, nationally and internationally, particularly through many various observances of the NIH Centennial during 1986 and 1987.
- Acquired the former convent property within the bounds of the NIH campus as the location for the Mary Woodard Lasker Center for Health Research and Education. The site is now used principally for the Howard Hughes Medical Institute (HHMI)-NIH cooperative training program for medical students to encourage more physicians to enter biomedical research. In 1985 HHMI renovated the convent building and constructed a residence for the HHMI-NIH research scholars.
- Initiated the Physician-Scientist and Dentist-Scientist training programs (5-year combined basic science and clinical development programs).

NIAID Reports AIDS Drug Success

Two NIAID-sponsored multicenter clinical trials of zidovudine (AZT) have shown that individuals with early ARC (AIDS-related complex) or asymptomatic HIV infection and a T4 helper cell count less than 500 can benefit from the drug. According to NIAID director Dr. Anthony S. Fauci, these studies emphasize "how critical it is that persons at risk for HIV infection be tested and seek prompt medical care."

In mid-August, the largest AIDS clinical trial to date showed that early treatment with AZT can slow progression of disease without significant side effects in asymptomatic HIV-

positive individuals with fewer than 500 T4 cells. In such individuals, the rate of progression to AIDS or severe ARC was about half that for the comparable group who received a placebo.

Two weeks earlier, another clinical trial showed that AZT significantly slows the progression of HIV infection to advanced ARC or AIDS in persons with early ARC and a T4 count less than 500. As a result of these two studies, an estimated 500,000 to 600,000 HIV-infected Americans with early or no symptoms of the disease could benefit from AZT treatment.



Telling an AIDS patient some good news regarding the drug AZT are (from l) Dr. Anthony S. Fauci, NIAID director and NIH associate director for AIDS research, Dr. H. Clifford Lane, NIAID deputy clinical director, and Dr. Randi Leavitt, senior investigator, NIAID.

Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit material.

Editor's Note

The NIHAA Update, published Spring and Fall 1989, is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

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State of the NIH Alumni Association

Dear NIHAA Members:

I would like to give you an update about the progress we have made during the last 12 months.

All alumni associations promote collegiality and comradery, but the primary goal of the NIH Alumni Association is to promote the best interest of NIH in its role as the leading biomedical research institution in the world. Hundreds of alumni already have expressed a strong interest in participating in this effort.

Our organizing committee came up with a four-phase plan:

Phase I—To establish a local Washington chapter, where so many alumni currently live.

Phase II—To establish a national and international organization.

Phase III—To establish alumni chapters, not dissimilar to the Washington chapter, in cities and countries around the world where there is a critical mass of NIH alumni.

Phase IV—To build an Alumni House on or near the NIH campus.

During the last few months, much has been accomplished.

Regarding *Phase I*:

First, the Washington chapter has been established and there are now close to 1,000 members locally and nationally.

Second, more than \$50,000 has been raised as start-up funds for the association.

Third, an NIH Alumni Association office is now operational and is located at the FAES Social and Academic Center on Old Georgetown Rd.

Fourth, a board of directors has been appointed.

Fifth, an executive director,



Dr. Abner L. Notkins, director of NIDR's intramural research program and chairman of the organizing committee for NIHAA.

Harriet Greenwald, is hard at work.

Sixth, a national advisory board will soon be appointed.

Seventh, an outstanding editorial board has been put together and our first two newsletters, the *NIHAA Update*, published. We hope that it will provide an avenue of communication between NIH and its alumni and we plan to publish it quarterly next year.

Phase II, the establishment of a national and international organization, is now under way. We sent out nearly 5,000 letters to former NIH scientists/administrators inviting them to join the NIH Alumni Association. I might add that several months ago an article appeared in *Science* magazine entitled "Calling All NIH Alumni" that outlined the purpose of the association. We have received more than 125 responses to that article. The national membership drive is off to a good start with some 550 new members joining.

Once *Phase II* is in place, *Phase III* will be initiated—that is the

establishment of local NIH chapters. If the alumni association is going to be successful it needs more than just a newsletter and an annual meeting. It needs support at the grass-roots level! We hope that in cities and countries where there is a critical mass of alumni such as New York, Chicago and San Francisco, local NIH chapters will be established. In fact some of our colleagues in foreign countries are ahead of us and chapters already have been set up in Taiwan, Japan and India.

Phase IV, the construction of an NIH Alumni House, is the greatest challenge. We view Alumni House as a place where NIH staff, alumni and colleagues from universities and industry can meet. We hope that the building will contain a restaurant, a comfortable library, a number of small meeting rooms and perhaps overnight accommodations for guests. At this time, we are just exploring the possibilities of this idea.

From a broader philosophical point of view, the alumni association could carry out two other important missions. The first is the dissemination of information to the lay public about poorly understood biomedical issues. I think that historians will almost certainly refer to this last part of the 20th century as the "revolution in biology and medicine." It is, therefore, ironic that it is becoming harder than ever to attract young graduates into a career of research. The uncertainty of grants, the difficulty in obtaining tenure, the relatively poor salaries and the beat of other drums are perhaps some of the reasons. Even more disturbing and surprising is the development of a conservatism and antiintellectualism in our society. Some would have us teach creationism, others believe that science is filled with fraud and still others are

(See *Association on p. 18*)

Association (continued from p. 17)

opposed to studies on fetal tissue, gene therapy, transgenic animals, or for that matter any animals in research. The days of the purity and unquestioned value of research are gone, and these new societal attitudes and their ramifications are of deep concern and could thwart the orderly progress of science in the future. Perhaps one of the reasons for this is that the gap between what we as scientists have learned from the enormous explosion of information and what the rest of society truly understands has grown even wider. I believe that we, as researchers, have a new responsibility—to counteract these antiintellectual and antisience movements. One of the contributions that the NIH Alumni Association could make, perhaps even better than NIH, because it would have a freer hand, is to explain these issues to the public.

A second important mission for an NIH Alumni Association would be to identify and bring to the attention of the NIH intramural staff young and promising local students and researchers who might wish to study at NIH. Perhaps our alumni could even do more than that, and act as “big brothers and sisters” who seek out and guide young men and women into science careers.

These are at least two worthy long-term goals for our alumni association.

Abner Louis Notkins, M.D.
Chairman, Organizing Committee,
NIHAA

(The above remarks were taken from a talk by Dr. Notkins at the NIHAA meeting on June 8, 1989.)



The Honorable Lowell P. Weicker, Jr. (c) greets guests including NIDR's Dr. Abner L. Notkins (l) and Dr. Lois A. Salzman (r) at the NIH Alumni Association meeting on June 8 at the Cloister. The reception and talk were attended by more than 120 guests. They heard an interesting and exciting talk by Sen. Weicker, now president and CEO of Research!America, who told the group that “it is terribly important that this concept of an alumni association take hold, and it is terribly important that it succeed.”

Face-lift (continued from p. 2)

The so-called “round robin” renovation of aging NIH laboratory buildings continues, with Bldg. 5 undergoing a \$17.5 million, 2-year renewal project. Bldgs. 8 and 4 are already complete, and Bldgs. 2, 3 and 7 will be done, in that order, after 5 is finished. Employees from Bldg. 5 have moved into Bldg. 4.

Animal holding space at NIH will also be expanded with construction of Bldg. 6B, which should be finished before the end of 1989. Built as a six-story facility adjacent to Bldg. 6, 6B includes 56,000 square-feet of space. Two basement levels and the ground floor of the structure will be divided into 23 holding rooms for small animals. The upper floors will be laboratories, primarily serving NICHD.

Over at the Clinical Center, which has undergone renovation almost

continually since its cornerstone was laid in June 1951, a new three-story surgery wing is nearing completion on the hospital's west side. Woven almost seamlessly into the red brick of the main structure, the addition will house heart and neurology operating suites as well as the CC's department of transfusion medicine and blood bank. The \$8.5 million project has been under way for the past 5 years. The former surgery suite in Bldg. 10A (the round building appended to the west portal of the CC) is now being renovated into an animal holding facility with completion slated for this fall.

Future additions to Bldg. 10 include a new medical intensive care unit to be constructed over the existing library patio on the hospital's south side and three new A-wing floors to accommodate AIDS researchers from several institutes. Since the A-

wing is located on the east extremity of Bldg. 10 (though, oddly, on the opposite side of the hospital from 10A), it is now possible to state truthfully that the CC is undergoing renovation from the east unto the west.

As if new buildings and renovations to existing structures were not enough to keep the builders busy, the utility systems on campus are in need of extensive modernization and improvement. A comprehensive program, estimated to span the next decade, is being developed to meet these "infrastructure" needs. Included in the program will be heating and refrigeration equipment in the NIH central power plants, the central distribution systems carrying steam and chilled water to the NIH buildings, and, in the case of the Bldg. 10, improvements to the infrastructure of the CC itself.

"It is a Herculean job," noted F. Anthony Clifford, acting director of DES. And one that is literally changing the face of NIH.

NIH Retrospectives



Fall 1949

The Heart Institute launches big program with \$10,000,000 in grants for fiscal year... The National Institutes of Mental Health, headed by Dr. Robert H. Felix, is scheduled to move 100 workers from Washington, D.C., to building T-6... Dr. Carl L. Larson appointed director of the Rocky Mountain Laboratory, filling the vacancy left by the recent death of Dr. Ralph R. Parker... Dr. Jesse P. Greenstein, head of the biochemis-

try section in the Research Branch of NCI, reported on a simple low-cost method for mass-scale production of amino acids... "The Hamsters" wowed audiences with their musical review on "Life at NIH."



Fall 1959

Dr. Ralph Wyckoff, internationally known biophysicist, retired from his position as chief of the section on molecular biophysics, NIAMD, after 12 years at NIH... A movie was filmed at the Clinical Center on NIH... Dr. Arthur Kornberg, former chief of the enzyme and metabolism section of NIAMD, is a shared winner of the Nobel Prize for "discoveries of the mechanism in the biological synthesis of ribonucleic acids and deoxyribonucleic acids."... Scientists at NIMH and NINDB voted to establish an Assembly of Scientists to "help develop and promote the professional excellence and scientific achievements of the Institutes"... A 513-acre site in Poolesville chosen for NIH animal farm.



Fall 1969

NLM during the first week of August 1969 passed another historic milestone in its computer operation as the number of citations entered in the computer passed the 1,000,000 marker... Dr. Harold L. Stewart retired from his job as chief of NCI's Pathologic Anatomy Branch and chief of the Laboratory of

Pathology after 30 years with NCI... The first group of six scholars-in-residence at the Fogarty International Center announced by Dr. Milo D. Leavitt, Jr., FIC director... The redesignation of the National Heart Institute as the National Heart and Lung Institute officially announced Dec. 8.

The NIH Record

U.S. Department
of Health,
Education, and
Welfare

September 19
1979
Vol. XXII
No. 10

National
Institutes
of Health

Fall 1979

Dr. DeWitt Stetten, Jr., NIH deputy director for science, has been named senior scientific advisor to NIH director Dr. Donald S. Fredrickson... Dr. Herbert C. Brown, NIGMS grantee, awarded the 1979 Nobel Prize for chemistry for his research on boron chemistry... NIH'ers ride bikes to work to save energy and money and thermostats are lowered in offices to save heat... HEW Secretary Patricia Roberts Harris visits NIH... Major NIDR field study will determine prevalence of dental diseases among 40,000 American students... Dr. Ralph D. Lillie, 83, who was with NIH from 1925 until his retirement in 1960, died Oct. 5 in New Orleans. His histochemical innovations helped investigators in many disciplines add a new dimension to their research.

If you did not receive the first issue of *NIHAA Update* and would like a copy, please notify the editor at 9101 Old Georgetown Rd., Bethesda, MD 20814.



A U T U M N 1 9 8 9

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Member Of The NIHAA
(Clip and mail)**

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If you joined NIHAA before
Nov. 1, 1988, and have not
returned your dues renewal
notice, please do so as soon
as possible.

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

from _____ to _____. My membership dues of \$ _____
(Title) (Organization)
(Years)
are enclosed payable to FAES/NIHAA. Dues are tax deductible.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment: _____

Mailing Address: _____

City, State, and Zip Code: _____

Telephone: _____

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are
welcome. Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at
NIH. Present NIH staff are invited to join as associate
members.

NIHAA Update
9101 Old Georgetown Rd.
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NIHAA Update

President's NIH Visit Lifts Spirits of Patients, Staff

By Rich McManus

President Bush's 90-minute visit to the NIH campus three days before Christmas left patients and caregivers with a strong impression of the genuine concern and compassion that he, his family and administration have for people with AIDS and their loved ones.

Joined by his wife Barbara, their son George Jr., and DHHS secretary Dr. Louis Sullivan and his wife, Ginger, the president received briefings on AIDS research from top NIH authorities then spent time with both adult and pediatric AIDS patients, urging them to tell him their problems.

"Two things struck me about the president's visit," said Dr. Anthony Fauci, NIAID director and NIH associate director for AIDS research. "First, it publicly confirms what we've all known—that the president is a strong supporter of NIH, particularly of its intramural program here in Bethesda.

(See Visit p. 2)



Lorraine Lamar watches as her son Austin, an AIDS patient, gives President Bush a kiss during his visit to NIH. The President exchanged gifts and holiday greetings with both adult and pediatric AIDS patients here. (Photo from Wide World Photos)

1989—The Year in Review at NIH

By Dr. William F. Raub

Technological advances of the past 15 years have enabled biomedical scientists to progress at unprecedented speed. This rate should continue to increase as the concepts and methods of structural biology, immunology, and molecular genetics find ever-wider application.

During 1989, NIH intramural scientists and awardees scored major successes. For example, a team from the National Cancer Institute and the National Heart, Lung, and Blood Institute transferred cells containing foreign genes into humans for the first time. This use of a tracer gene is a major step toward gene therapy in humans.

In another elegant blend of immunology and molecular genetics, scientists at the National Institute of Arthritis and Musculoskeletal and Skin Diseases used a rat model to clone the gene for the last subunit of the IgE receptor—which plays a central role in initiating allergic reactions—and determined the receptor's complete structure. They then developed a rat-human chimeric tissue culture system that expressed IgE-binding properties characteristic of receptors on normal human cells. This system can now be used to screen for a new class of drugs to block the binding of IgE to its receptor and thus prevent allergy attacks.

A high point of the year was the identification of the cystic fibrosis gene by grantees of the National Institute of Diabetes and Digestive and Kidney Diseases and NHLBI. Once the precise function of the protein encoded by the CF gene is determined, prospects for developing drugs that can be designed to correct the defect will be enhanced significantly. Eventually it may be possible to develop a way to correct the



Dr. William F. Raub

gene itself and thus prevent or cure the disease.

A technique that has revolutionized molecular genetics is the polymerase chain reaction (PCR), which can be used to isolate and make large amounts of a desired piece of DNA in a few

(See Review p. 18)

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Second, it was an excellent example of the president's empathy and compassion for all AIDS patients, whether they're children or adults.

"He sent a strong signal," Fauci continued, "that he fully understands that the virus is the enemy, not the people who have the disease."

Particularly moving was Bush's participation in a support group meeting for adults with AIDS on the 11th floor of the Clinical Center.

"The discussion was very open and frank," Fauci recalls. "The president wanted to hear from all of the patients, not just the few who spoke up at first. It wasn't just a quick photo opportunity where he came in, shook hands then left. He asked appropriate questions and insisted on hearing from everybody. Even when his staff told him it was time to leave, he wanted to stay and listen to their problems."

"The men themselves were greatly moved by the obvious compassion of the president," he added. "The exchange was full of warmth."

Fauci, who has twice demurred from Bush's entreaties to become the next



The first lady enjoys her meeting with a young patient.
(Photo courtesy of the White House)



NCI director Dr. Samuel Broder (l) briefs the president and first lady on the latest AIDS research advances. Looking on are Dr. Anthony Fauci (c) and DHHS secretary Dr. Louis Sullivan (r). (Photo courtesy of the White House)

NIH director, spoke with the president about recent research advances against AIDS; also offering updates were NCI director Dr. Samuel Broder and Dr. Philip Pizzo, whose NCI Pediatric Branch cares for youngsters with AIDS.

The president publicly declared that Fauci was one of his modern-day heroes during the campaign that landed him in the White House. Fauci confirmed that Bush continues to tap him for opinions on federal biomedical research.

"On the occasions that we meet he always asks me, 'Do you have enough (budget)?' and I tell him that, relatively speaking, yes, we do get a very generous share. But a greater pool (of funds) is needed for all of biomedical research, not just AIDS. I told him that scientific opportunities outstrip available resources at the moment. It's not that the amount of money is not substantial, but when he asks if we could do more good things for people if we had more money, my answer is, 'Definitely.' "

Bush addressed a packed Masur Auditorium audience after his AIDS briefings.

"Two years ago in this very building, I met a person with AIDS who spoke of his prolonged suffering," said the president. "And I've just come from two more meetings—one with a patients' support group and the other a family support group. And both reminded me of the need for compassion and understanding."

He defined understanding as "educating Americans who don't want to help, don't want to become involved because of a misplaced fear. They're afraid of holding an AIDS patient because they're frightened of getting AIDS. Barbara and I want to say, and we hope we can continue to demonstrate this, they are wrong. They're simply uninformed."

The president said NIH employees embody "all year round" the compassion and understanding that characterize the Christmas season.

"Too often we forget the true message of this time of year—that justice and kindness can indeed foster goodwill toward all. You know that message," he concluded. "You live that message."

NIHAA Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit material.

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Dr. Lois A. Salzman

Mr. Storm Whaley

NIH Grantees Win Nobel Prizes

Two cancer researchers won the 1989 Nobel Prize in Medicine. **Drs. J. Michael Bishop**, and **Harold E. Varmus**, of the University of California, San Francisco, shared the prize, worth about \$470,000.

The Nobel Prize recognizes the work Bishop and Varmus did in the 1970s. They showed that a *crc*-like gene is present in normal cells of nearly all animals and changed the way scientists thought about cancer.

Both scientists, who have had long-time support from the National Cancer Institute, have Outstanding Investigator Grants. Bishop, since 1971, has received more than \$14 million from NCI. Varmus has received nearly \$6 million from NIH, including more than \$5 million from NCI. As young investigators, both worked at NIH in the 1960s.

Drs. Thomas R. Cech, of the University of Colorado, and **Sidney Altman**, of Yale University, jointly were awarded the \$469,000 Nobel Prize for Chemistry on Oct. 13. Working independently, Cech and Altman discovered that RNA acts as a true enzyme.

This finding upset the idea that protein lies behind every catalytic activity of a cell. The capacity of RNA to function without DNA or protein has implications for evolution that have been both embraced and challenged by evolutionary biologists. The finding may answer the modern version of the old question—Which came first, the chicken or the egg?—giving RNA first place over DNA or protein.

Cech, a Howard Hughes Medical Institute investigator, is also an American Cancer Society researcher. His support from the National Institutes of Health has totaled about \$2.5 million since 1975. Altman's NIH support has totaled about \$3.2 million since 1972.

Sixty-two Americans have won the Nobel Prize for Medicine or Physiology since 1945; 43, or more than two-thirds of them, had either worked at or been supported by NIH. NIH has employed or supported more than half (52) of the 99 scientists worldwide who have become Nobel laureates for medicine or physiology since World War II.

More than half (18) of the 30 Americans who have won the Nobel Prize for Chemistry also had NIH ties. Since World War II, 75 scientists worldwide have received the chemistry prize; 22 of them had been NIH employees or grantees.

Dr. James B. Snow, Jr. To Head New Institute on Deafness

Dr. James B. Snow, Jr., professor and chairman of the department of otorhinolaryngology and human communication at the University of Pennsylvania School of Medicine, has been chosen to head the newest institute at NIH. The new institute, known as the National Institute on Deafness and Other Communication Disorders (NIDCD), was created by Congress in October 1988. He assumed his position on Mar. 1.

Visitor Center Offers Tours

The NIH Visitor Information Center (VIC) in Bldg. 10 is now offering a guided tour of the NIH campus at 11 a.m. every Monday, Wednesday and Friday. The tour begins at the VIC reception desk in the lower lobby of the Clinical Center.

For further information, call 496-1776.

NIHAA Forum Is Hype Hip?

Overselling of Science Presents New Dangers

By Dr. Robert G. Martin

Something new and insidious has crept into the scientific literature—hype. In the past two years, we have heard about the wonders of cold fusion, mammalian DNA replication origins working as plasmid origins, immunological reactions working after the antibody has been diluted away, transgenic mice made by dipping sperm in DNA and fused proteins made by exotic new mechanisms. While one or two of these wonders may yet be true, it will not be because the initial papers proved it so.

One could easily explain each of these ballyhooed disappointments. Errors of judgment happen, even under the cautious system by which each paper submitted to a scientific journal is referred to a cadre of peer reviewers.

But in each of these cases a scientific journal's editor-in-chief was alerted via this system to be skeptical of the results. In several cases, the editor had been specifically warned by reviewers not to publish the article because the science was faulty.

Still, two of the editors chose not only to publish, but also to hype the articles as potentially major discoveries by running covers, commentaries and reviews to promote the article. And when the articles were then taken up by major newspapers, relying as those papers must on the prestige of the publishing journal, the journal editors took credit for the stir created by the publicity, but subsequently denied responsibility for the fiasco when the articles were proven unreliable.

Of course, the editor of a scientific journal can't take responsibility for each

and every article that appears in his journal. No one would argue that he should. But he can take responsibility for the public relations gimmickry he uses to promote his journal. And it is this gimmickry that is new to science—and dangerous.

Mind you, I am not questioning the right of any scientist to issue press releases or call press conferences to promote his work or the company with which he is affiliated. Rather, I worry that not only the lay public, but scientists as well are accepting public relations gimmickry without question.

In an interesting study (unpublished), Dr. J. Lee Rosner has examined the forms of titles used in the biomedical literature over the past 10 years in journals such as the *Proceedings of the National Academy of Sciences*, *Nature*, *Cell* and *Science*. The results are striking. From articles that 10 years ago bore such titles as "Studies on the possible carcinogenic effects of K" or "Investigations of Q" or "Possible interactions of A with B", we now have—almost without exception—active sentence titles such as "K causes cancer", "A interacts with B", or "Q is the secret of life". The data are no more compelling now than then. Rather, these

titles are a feature of the huckstering that has become a fundamental feature of science.

I don't believe that science, or the scientific literature, has gotten significantly better or worse over the years. The small amount of true fraud that exists now, existed then. As a percentage of the total literature, it may even have decreased. (Don't forget there are those who believe that Mendel cooked his data, which would mean that 100% of geneticists working in the late 19th century were frauds.)

Faulty reasoning, poor editing and inadequate controls are nothing new either. And while my own view is that reviewers have become more careless, that's a minor change by comparison with what I'm concerned with here.

What is new is the interjection of hyperbole by the editors of some of our more prestigious journals into the orderly, if chaotic, process of scientific evolution. *Cell* now seems to have joined *Nature* in the policy of promoting one or two articles per issue with an instant "minireview" analysis, much like the TV commentaries after a presidential address and often with as much insight. The editor of *Science* has initiated a salute to the "molecule of the year" and suggested in an editorial that the human genome project would cure society of homelessness.

Scientific yellow journalism, or should I say scientific Fleet Street editing, is upon us. The examples I have cited are only the tip of the iceberg. I assume the motivations of these editors are entirely laudable—e.g., to promote the sales of their journals so as to keep them financially sound. Still, the practice is detrimental. I, for one, would be just as eager to read the journals in anticipation of convincing data.



Dr. Robert G. Martin

Dr. Martin is chief of the microbial genetics section in the Laboratory of Molecular Biology, NIDDK.

NIHAA Forum**The Genome Project: The Opportunity of the Century for Biology and Medical Sciences***By Dr. J. Craig Venter*

In a recent NIHAA Forum, Robert Martin asks, "Why do the human genome project?" The answer depends in part on one's scientific, intellectual and social background as well as medical history. Those who are affected or have family or friends that suffer from one of the more than 4,000 genetic diseases that afflict mankind should be interested in a project that will dramatically speed the understanding of these diseases. Individuals with heart disease, stroke, cancer, Alzheimer's disease, schizophrenia or other disorders with a more complex genetic predisposition might welcome a scientific project that will potentially increase by 3,000 times the rate at which new basic information is obtained on genetics and disease. Others interested in the history of humankind and the evolution of species on this planet have an interest in a program that will produce a complete genome reference sequence for humans and other species including a bacteria (*E. coli*), a yeast (*Saccharomyces cerevisiae*), an insect (*Drosophila*), a worm (*C. elegans*), and another mammal, the mouse. These complete DNA sequences together with sequences obtained from other species have the capability of providing a molecular history of *Homo sapiens*. Such work will answer the questions concerning the existence of unique human genes responsible for the essential differences between humans and other species. If we can identify such unique human genes then understanding their role in the evolution and development of humans will provide

exciting new insights into the meaning and definition of humanness. If, on the other hand, unique human genes don't exist, then the 97 percent of the human genome that has been referred to as "junk DNA" could be of critical importance in providing assembly instructions for the 3 percent of the genome that contains the ~100,000 coding genes.

Some investigators will be interested in the genome project for the excitement and the challenge that goes with the exploration of the unknown (less than 2 percent of human genes have been mapped and only a fraction of those have been sequenced). Some may feel that the increase in the information provided by elucidating the DNA and protein sequence of the estimated 100,000 human genes will move basic science forward at a dramatic new pace. This list could be substantially expanded, but I would not include the reasons that Dr. Martin has apparently gleaned from the press.

Let me expand on some of these topics as it might help to show that Dr. Martin, despite his claim that he understands the science, has gone astray in his reasoning.

Dr. Martin states that gene mapping and sequencing efforts were funded prior to the conception of the genome project and will continue to be funded without it, and that genetic diseases such as cystic fibrosis are being solved outside of the genome project. While this statement on its own is true, I feel the overall question is one of scale, cost and speed. Currently, only a few of the 4,000 genetic diseases have been traced to a defective gene and this usually has been at a tremendous cost of effort, dollars and time. At this present rate we would be well into the twenty-second century or beyond before we would be at the point for all diseases that we are currently with cystic fibrosis. If one examines the tremendous effort and considerable funding that have been directed to scores of research teams for

work on genetic disorders such as cystic fibrosis, muscular dystrophy and Huntington's disease, it is clear that it would be impossible to duplicate such resources for investigations into most, let alone all, genetic disorders. Also it is not clear that the genetic techniques that helped elucidate the cause of cystic fibrosis will work on all genetic disorders. For example, the Huntington's disease gene has been localized to chromosome 4 since 1983. Subsequently, extensive research has narrowed the search for this gene to ~10,000,000 bases of DNA. However, a region this size could potentially contain hundreds of genes. In a recent lecture at NIH, Dr. James Gusella of Harvard indicated that due to the complex genetics in the region of chromosome 4 where the Huntington's defect has been localized, geneticists have emptied their "bag of tricks" that has been useful in sublocalizing other disease loci. This most likely means that each gene in this large chromosome region must be located, isolated and sequenced in order to help identify the Huntington's disease defect. This is a process that could take years for Huntington's disease, and longer for other diseases, where extensive patient populations have not been genetically characterized or are not available. While it is probably too late for the genome project to help with Huntington's disease, it cannot but help substantially with thousands of other diseases. I am certain that once a reference human sequence exists, it will take a matter of months, not years, to localize a disease gene once it has been mapped to a particular chromosome. Should Dr. Martin or others choose that we not proceed with the human genome project as planned, I invite them to justify and explain the delay to the patients and the families of those who will be affected.

Dr. Martin argues, as does Jeremy Rifkin, that because gene therapy is not
(See *Genome* p. 6)

available the primary use of new genetic information will be to increase the number of abortions. This is absurd! How can one be a basic scientist and believe that unraveling the molecular basis of disease will provide only two alternatives: gene therapy or abortion? The ink is barely 6 months old on the cystic fibrosis gene discovery studies and tremendous new efforts are under way to study the chloride ion channel and to develop new pharmaceuticals to be used as therapeutics. This is in addition to efforts under way on gene therapy. This is in fact one of the ways in which the genome project will drive and enhance fundamental research. Each new gene uncovered, whether linked to a genetic disorder or not, will foster new research and discovery. With 100,000 genes in the human genome alone to be characterized, this will absolutely be the most exciting period in the history of science.

The estimates of the amount of money provided by NIH for gene mapping and sequencing exceeded \$523 million in 1989. This does not include the amounts provided by the National Science Foundation or the Departments of Energy or Defense or the multitude of private foundations including the Howard Hughes Medical Institute, the American Heart Association, the Cystic Fibrosis Foundation, etc. How much public debate is there now on the expenditure of these funds or the rest of the multibillion dollar science budget? At the current rate (non-genome project) of sequencing human genes it will take hundreds of years and more than 200 billion¹ (1990) dollars to acquire the sequence of just the coding regions of the genome. It is possible that a number of important genes will never be found by conventional methods. However, new technological advances in all phases of DNA sequencing now make genome sequencing a viable, if not the

¹The amount ~\$200 million/year spent by NIH on human gene mapping and sequencing divided by ~100 new human gene sequences/year times 100,000 genes.

only logical, approach to institute immediately. The possibility of reducing the cost of genome sequencing from \$200 billion to \$3 billion spent over 15 years cannot be ignored. The haploid human genome (3 billion bases) can be sequenced over the next 12-15 years and the sequence can be produced at a steady rate of over 400 million bases/year. This rate is over 300 times the current rate of sequence production (from all species) since 1977, when rapid DNA sequencing was introduced, and over 3,000 times the current rate of human sequence production. Except for a small percent of the total genome budget that was transferred to the National Center for Human Genome Research at NIH, the genome budget is *new* money to NIH, appropriated to the genome project. To suggest that this money would be available to other biomedical research projects if the genome project was cancelled is unrealistic.

The entire cost of the genome project will more than be covered by the expanded tax base resulting from new technology development, new diagnostics and new therapeutics. Last year alone the major pharmaceutical companies paid combined U.S. taxes of \$2.4 billion. The proposed steady state genome budget is \$200 million/year or only a fraction of the existing tax base. If inroads are made on any major disease affecting the U.S. population, the multibillion dollar annual health care budget will likely decrease. If we do not carry out this project in the U.S. then the tremendous economic/technological/medical benefits will be lost to other countries.

The bottom line is that we cannot afford not to go forward with the genome project.

Dr. Venter is chief of the section of receptor biochemistry and molecular biology, and codirector of the Laboratory of Molecular and Cellular Neurobiology, NINDS. He has proposed to sequence the human X chromosome at NIH.

Hood Maps Sequence of Genome's Benefits to Biology

By Rich McManus

The conviction that life, particularly at the molecular level, is just fantastically amazing suffered no tarnishing at the hands of Leroy Hood, a biologist at the California Institute of Technology who recently gave a packed Masur Auditorium audience a glimpse of the brave new world in biology that is aborning with each advance in the human genome initiative.

Armed with twin slide projectors, seamless diction and boundless curiosity and enthusiasm, Hood toured the next 25 years in basic biology and medicine for a crowd assembled for the first of two lectures Hood presented under the auspices of NIDR's Visiting Scholars Program.

"I predict that in 15 years we will have identified more than 100 genes that cause disease and, for the majority of them, we will know how to circumvent the problems," he forecasted. "Medicine will move from its current reactive mode to a preventive mode."

The revolution in biology that began 25 years ago with test-tube DNA experiments is continuing today, he said, powered by sophisticated new technologies "that have profoundly altered the way we do biology": recombinant DNA, monoclonal antibodies and, Hood's specialty at Cal Tech, microchemical instrumentation.

Sequencing all of the DNA in the 50,000-100,000 human genes "is a tool, not a research project," he explained. Although interesting in its own right because it challenges science to find the most accurate and economical method of accomplishing it, the mapping and sequencing project will be most valuable for the experiments and therapies it generates, Hood suggested.

"The first 10 years of the project will be occupied by the development of new technologies," he said. "Clearly, they aren't powerful enough now to mount a frontal attack on the human genome itself."

What biologists aim to discover, ultimately, is how human development proceeds from a single cell to 1×10^{14} cells, all of which interact, more or less harmoniously, with one another. It is this "chromosomal choreography" that is of such surpassing interest.

Humans can make some 50,000-100,000 proteins, which are three-dimensional molecules folded exquisitely into unique shapes. How do genes, which have a single dimension, express these proteins? What is the function of a protein's shape and how does it change over time? The genome project, Hood assured, will help answer these fundamental questions.

"We'll be able to fashion and sculpt proteins not heretofore seen in nature," he predicted.

Two types of maps will emerge during the project's first decade—a physical map, which involves cutting chromosomes into segments and assembling a sort of "linear jigsaw puzzle." The second map will be genetic, showing which genes carry which traits.

"One day we will be able to superimpose the two to find precisely where the gene encoding schizophrenia is located," said Hood.

The genomes of relatively simple organisms will be studied as part of the initiative. Bacteria, yeast, nematodes and flies will be examined for how genes work and how regulatory and functional networks are arranged. The mouse genome will be studied for conserved regions of DNA and as a model organism for human disease.

Beyond the first step of technology development, which Hood said must be made 100 times more powerful than it is today, and the second step of mapping/

sequencing is the problem of data interpretation, which "will be a challenge for many years.

"We should get one-half to 1 percent of the (human) sequence in the first 5 years," Hood said. Regional DNA sequencing will occupy the next half decade. "After 10 years, a very serious attack can be mounted on the remaining 95 percent of the genome."

Primarily interested in studies of the T-cell receptor loci in mouse and man, Hood and his colleagues at the Center for Analysis of Genes and Proteins are devising ever more sensitive and accurate assays for determining protein sequences. In 1986, his team developed a fluorescent DNA sequencer. Today, they are applying better chemistry and computational power to these problems, employing robots and automated protein analyzers to speed their work.

Perhaps the world's most sophisticated computer chip, composed of 400,000 transistors packed into an area of 1 square cm, has been fashioned in Cal Tech labs as a tool for analyzing DNA homology. Two chips, a BISP (biological information signal processor) and FDF (fast data finder), are helping scientists quickly explore thousands of nucleotide base-pairs for regions of similarity.

Hood also described a new test that can determine single nucleotide mutations in DNA—an oligonucleotide ligase assay—which will be an important diagnostic tool in medicine.

Acknowledging that social issues—prenatal diagnosis of disease allowed by DNA technology, workplace discrimination made possible by DNA fingerprinting, as well as new concerns in such areas as insurance and racism—are also factors in the human genome initiative, Hood dismissed them relatively lightly in this discussion. More troublesome, he suggested, is an "abysmal level of science education at the primary and secondary levels in American schools."

News From NIHAA Members

Dr. Peter M. Banks, NCI, Laboratory of Pathology, 1972-74, was just appointed "Director of Anatomic Pathology, and first Frank M. Townsend Professor of Pathology, at University of Texas Health Science Center, San Antonio."

Dr. Maurice Bender, who was at NIH in various capacities from 1958 to 1971, writes: "I am currently spending a great deal of time in overseas travel. Through Elderhostel and other programs my wife & I have visited and studied in Scandinavia, Israel, Russian Soviet Republic, China, Japan and other countries in Europe and across the Mediterranean. In between times I serve on several public and private agency Boards that deal with the problems of the developmentally disabled, the homeless and the elderly."

Dr. Baruch S. Blumberg, who was in the Geographic Medicine and Genetics Section of NIAMD from 1957 to 1964, is now Master at Balliol College, Oxford University for 7 months of the year. He is also still spending part of his time as Distinguished Scientist at the Fox Chase Cancer Center in Philadelphia.

Dr. Bernard Brookman, who was with the Division of Research Grants from 1957 to 1966, writes: "After leaving NIH in 1966, I worked for the Hooper Foundation, University of California, San Francisco, as Associate Director for ICMRT (an NIH grant), retiring from there in 1971. Since then we have lived as retirees in Santa Cruz and in Watsonville, keeping occupied as volunteers in a variety of service programs."

(See *Members* p. 16)

Brief Time Line of NIH Discoveries

Introduction

The NIH Historical Office is compiling a time line of major research accomplishments, primarily focusing on the intramural program. In this issue, we present information from the Hygienic Laboratory period, 1887-1929. Later issues will cover more recent decades. Information has been drawn from many sources, and an effort has been made to link each item with one or more publications. To make this document as accurate and useful as possible, we would solicit your comments and suggestions, which should be sent to: Dr. Victoria A. Harden, NIH Historical Office, Bldg. 60 Room 152, National Institutes of Health, Bethesda, MD 20892.

Part I: 1887-1929

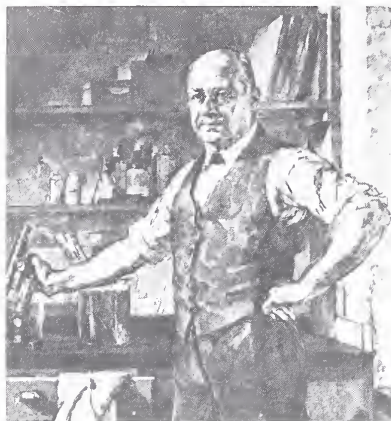
1887

Laboratory of Hygiene founded. Director Joseph J. Kinyoun made the first laboratory diagnosis of cholera in western hemisphere.



1895

Joseph J. Kinyoun launched production of diphtheria antitoxin at the Hygienic Laboratory, one of the first places it was produced in the United States.



1890s

Joseph J. Kinyoun designed the Kinyoun-Francis Sterilizer, a shipboard disinfectant apparatus used effectively for quarantine procedures.



1901

Hygienic Laboratory first recognized in law through an appropriation statute authorizing \$35,000 for a building and charging it with investigating "infectious and contagious diseases and matters pertaining to the public health."

1902

Biologics Control Act stimulated research into biologics products; another act reorganized the Service and authorized the Hygienic Laboratory research program.

1902

Charles Wardell Stiles identified the hookworm as the cause of anemia in the southern U.S. Although this discovery

was made a few months before he joined the Hygienic Laboratory, his subsequent work on hookworm over the next two decades helped to eliminate it as a problem in the South.

1902-03

Julius O. Cobb and John F. Anderson initiated first Hygienic Laboratory studies on Rocky Mountain spotted



fever. Their works launched forty-five years of research on RMSF.

1905

Reid Hunt demonstrated the presence of thyroid hormone in the blood and introduced the acetonitril test for thyroid.

1905

Milton J. Rosenau established the standard for diphtheria antitoxin.



1906

Walter W. King showed the transmission of Rocky Mountain spotted fever by infected ticks to guinea pigs.

1906

Milton J. Rosenau and John F. Anderson published a pioneering study on anaphylaxis.

1906

Reid Hunt discovered the hypotensive effects of acetylcholine.

1906

Milton J. Rosenau, Leslie L. Lumsen, Joseph H. Kastle and other Hygienic Laboratory workers conducted an epochal investigation on the origin and prevalence of typhoid fever in the District of Columbia which became the catalyst for later, broader epidemiological studies.

1907

Joseph H. Kastle developed a reagent for the recognition and estimation of free hydrochloric acid in gastric contents. The reagent he identified became known as "Kastle's reagent."

1907

Reid Hunt described the toxic effects of methyl and ethyl alcohols.

1907

Joseph H. Kastle and other workers in the Division of Chemistry designed a "hemoglobinometer" to measure hemoglobin in blood. An advance over techniques then in use, it became the standard method for several decades.

1908

Milton J. Rosenau and John F. Anderson established the standard unit for tetanus antitoxin.

1908

Arthur M. Stimson developed a better method for rabies vaccine preparation so it could be sent more safely and thus be more widely distributed.



1908

George W. McCoy first demonstrated that rodents were a reservoir of bubonic plague.

1908-1911

John F. Anderson, Leslie L. Lumsen and Wade H. Frost expanded scope of earlier typhoid studies and results of their investigations into stream pollution, milk standards, and water purity became classic examples of epidemiological methods and training.

1909

John F. Anderson and Joseph Goldberger confirmed Charles Nicolle's finding that the body louse was the vector of epidemic typhus fever. They were the first to transmit typhus by direct inoculation of the organisms into experimental animals.

1909

George W. McCoy published a report on 99 neoplasms found in 100,000 rats examined in the plague control investigation in California. This was the first involvement of the Hygienic Laboratory in cancer research.

1910

William H. Schultz described the contraction of the isolated strip of sensitized guinea pig ileum when suspended in a bath of physiological

solution and challenged by specific corresponding antigen. This reaction became known as the Schultz-Dale phenomenon (the "Dale" from the similar work of English physiologist and pharmacologist Sir Henry H. Dale).

1910

John F. Anderson and Wade H. Frost extended earlier studies on hypersensitivity and used for the first time the word "allergen" in reference to allergic antibodies.

1910

Joseph H. Kastle described the oxidases and other oxygen-catalysts concerned in biological oxidations.

1911

John F. Anderson and Wade H. Frost provided the first laboratory evidence of polio infection in persons with non-paralytic disease. This paper was followed by other studies and field investigation in the Hygienic Laboratory on poliomyelitis.

1911

John F. Anderson and Joseph Goldberger first transmitted measles (rubeola) to monkeys by contact.

1911-1914

George W. McCoy, Charles W. Chapin, William B. Wherry, and B. H. Lamb elucidated a new disease, tularemia.

1912

Legislation shortened the name of the Service to "Public Health Service" and expanded the scope of Hygienic Laboratory investigations to include noninfectious diseases and water pollution.

1913-1919

Earle B. Phelps in the Division of Chemistry conducted a series of studies on water pollution and the biochemistry of sewage and industrial wastes which had far reaching importance for pure water.

(continued on p. 10)

1914

Joseph Goldberger identified pellagra as a nutritional deficiency disease.



1914

Walter L. Treadway conducted the first Hygienic Laboratory survey on mental health, studying the role of public and private agencies in ministering to social needs. He continued over the next fifteen years to do surveys on mental health and other problems.

1915

Edward Francis improved the method for embalming, which was of great importance for intrastate shipping of bodies.

1916-1918

During World War I, work by Hygienic Laboratory investigators changed the way smallpox vaccinations were administered to soldiers. They also found that shaving brushes were a source of anthrax and tetanus infections, and production methods were changed.

1917

Mather H. Neill discovered that scrotal reactions of guinea pigs with "Mexican" typhus (later known as murine typhus) could be used as a differential test with "European," or epidemic, typhus. It was first known as the Neill phenomenon (Later called the Neill-Mooser phe-

nomenon after Neill and Herman Mooser, a Swiss pathologist working in Mexico).

1918

Alice C. Evans described the organism that caused undulant fever. Her work hastened the pasteurization of milk in the United States. She also initiated the collection and study of streptococci and their bacteriophages.

1919

Edward Francis extended the earlier observations on tularemia. His other studies, continued into the 1920s, clarified the nature of the agent, its distribution in animals, the role of ticks and deer flies as vectors and the routes of infection in man. The bacterium was later named *Francisella tularensis* in his honor.



1922

Ida A. Bengtson discovered a new variety of *Clostridium botulinum*. This strain was designated as type "C."

1923

William Mansfield Clark alerted the public to the dangers of tetraethyl lead in gasoline, and further field studies, conducted by James P. Leake, set the standards for the safe level of lead in gasoline.

1923

Atherton Seidell developed a physiological test for the activity of vitamin preparations.



1924

Roscoe R. Spencer and Ralph R. Parker produced a vaccine against Rocky Mountain spotted fever, the first human vaccine prepared from the bodies of arthropod vectors.

1925

Joseph W. Schereschewsky, head of a PHS Special Cancer Investigations Laboratory established in 1922 in Cambridge, Massachusetts (in cooperation with Harvard University Medical School), published a statistical review of cancer death figures in the United States, 1900-1920, which increased interest in cancer research.

1925

Charles Armstrong showed that 25% of commercial bunion pads commonly used to cover smallpox vaccinations were contaminated with tetanus spores. His recommendations that such dressings be abandoned saved lives and stimulated the development of the multiple pressure method of vaccination.

1925

Rolla E. Dyer defined the unit for scarlet fever streptococcus antitoxin.

1925

Carl Voegtlin described much of the pharmacology of arsphenamine and related arsenicals.

1926

Kenneth F. Maxcy identified an "endemic" form of typhus fever in the southeastern United States and suggested that some parasite of the rat might be its vector.

1926

James P. Leake wrote the authoritative study on the multiple pressure method of vaccination for smallpox.

1928

William Mansfield Clark published a summary of his classic work during the decade on oxidation-reduction systems.

1920s

Carl Voegtlin, in charge of cancer research at the Hygienic Laboratory, conducted early studies on the biochemistry of cancerous and normal tissue. He also investigated the effects of nutrients—protein, riboflavin and biotin—on liver tumors in rats. These studies were among the earliest on the relationship between nutritional factors and cancer.

1920s

Lewis R. Thompson worked on problems of industrial health and contributed a series of well-known monographs on the health of workers in the dusty trades.

1920s

Lawrence Kolb conducted early studies on narcotic addiction and its relationship to crime and personality. In association with Albert C. Dumez, he was able to produce morphine and heroin dependence in monkeys.

1920s

Ida A. Bengtson and Charles Armstrong worked on the problems of food poisoning and botulism as a result of improperly canned foods. Their work contributed to better and safer methods of canning.

1930

Hygienic Laboratory renamed "National Institute of Health."

Panel Looks At Ways to Strengthen NIH Directorship

By Carla Garnett

NIH's new director should have more authority and a larger salary, according to consensus of the advisory committee on NIH, which conducted an open meeting at HHS headquarters Jan. 29. Chaired by Dr. James O. Mason, assistant secretary for health, and attended by HHS secretary Dr. Louis Sullivan, the committee's primary task is to evaluate present aspects of the NIH director position and recommend measures that would strengthen it.

NIH, which accounts for more than 50 percent of the Public Health Service budget, has had an acting director since July 1989 following the resignation of Dr. James B. Wyngaarden, who had been director for 7 1/2 years. Initial efforts to hire for the position have proved unsuccessful so far.

The 17-member committee, composed primarily of private sector biomedical researchers and academicians, also includes former NIH director Dr. Donald Fredrickson, now of NHLBI's Molecular Disease Branch; NIH acting director Dr. William Raub as well as two recent prospects for NIH director, Dr. Anthony Fauci, NIAID director, and Dr. P. Roy Vagelos, chairman and chief executive officer of the pharmaceutical firm Merck & Co, Inc.

"I want to extend my personal appreciation to each of you for consenting to be a member of this committee on what I consider a very important task," said Sullivan, who greeted the panel. "When I was named as the president's choice for secretary of Health and Human Services, I indicated that one of my top priorities would be to strengthen biomedical research.

"Clearly, we have grown tremendously over the years in terms of budget and staff. Changes have been made. Certainly, some changes have been helpful. Some may not have served well if NIH is to continue to be the premier institute of biomedical research.

"Clearly, the 1990s are different from the 1950s. We need to have at the helm of NIH a very strong individual to recruit the best researchers, to give leadership to the scientists as well as advice to me, the president and Congress."

The first item on the committee's agenda was review of public responses to a notice placed by Mason in the Dec. 27 *Federal Register*.

The notice asked several major questions: What are the forces that brought NIH to the position it currently enjoys as the leader of the nation's biomedical research enterprise? What major challenges will the NIH be facing in the 1990s and beyond? What type of individual is needed to fill the position of director, NIH? What factors are responsible for diminishing the attractiveness of the position of director, NIH? What changes are needed to strengthen the position of director and prepare the NIH for the challenges of the 1990s and beyond?

Public responses to the notice, which were summarized and made available to meeting attendees, were submitted by individuals or groups from such institutions as the Association of American Medical Colleges, the Federation of American Societies for Experimental Biology, the American Heart Association, the American Society for Microbiology and the American Federation for Clinical Research. Most responses were frank and thoughtful.

"The strong federal investment over the past 50 years in support of scientists pursuing basic, nontargeted research" was cited by one respondent as a force that made NIH the nation's leader in biomedical research.

(See Panel p. 24)

NIH Notes September 1989 - January 1990

HONORS AND AWARDS

Dr. Richard H. Adamson, director of NCI's Division of Cancer Etiology, was honored with a Meritorious Presidential Rank Award for "outstanding leadership and accomplishments in the area of scientific management" ... **Dennis E. Barnard**, a biologist in the Veterinary Resources Branch, DRS, was primary recipient of the 1989 Technician Publication Award of the American Association for Laboratory Animal Science ... **Dr. Katherine L. Bick**, NIH deputy director for extramural research and training, received a Meritorious Presidential Rank Award for her "sustained leadership in developing unified NIH-wide extramural policies and procedures" ... **Dr. Arnold Brossi**, deputy director of NIDDK's Laboratory of Analytical Chemistry, will receive the 1990 Alfred Burger Award from the American Chemical Society (ACS) in May. This award, the highest honor in medicinal chemistry, recognizes his many scientific contributions during his 36-year career ... **Dr. Willy Burgdorfer** of NIAID's Rocky Mountain Laboratories was honored by the Infectious Diseases Society of America with the Bristol Award presented at the society's meeting in Houston. The award is presented annually for outstanding contributions to the field of infectious diseases ... **Dr. Sheldon G. Cohen**, scientific advisor to the Office of the Director, Division of Intramural Research, NIAID, received a Special Recognition Award from the American Academy of Allergy and Immunology for his "many years of service dedicated to the Academy and to the field of allergy and immunology" ... **Jasper L. Cummings**, an accounting technician in the Division of Financial Management, recently received a humanitarian award and medal from the Venerable Order of St. Francis of Assisi for his work helping those in need ... **Dr. Marinos Dalakas** of NINDS's Medical Neurology Branch was presented the "1989 Academy of Achievement Award" by the American Hellenic Educational Progressive Association

for his contribution to medical science, especially his original description of and research on post-polio syndrome ... **Dr. John W. Daly**, chief of NIDDK's Laboratory of Bioorganic Chemistry, earned a Meritorious Presidential Rank Award for his role as "an international leader whose career has been devoted to the advancement and extension of knowledge in the field of pharmacology and to the discovery of new, often unique, agents for use in the investigations of physiological and pharmacological function of living organisms" ... **Dr. Igor B. Dawid**, chief of NICHD's Laboratory of Molecular Genetics, received on Oct. 21 an honorary doctorate from the University of Lausanne in recognition of his research on our understanding of gene regulation, especially during embryonic development ... **Dr. Jonas H. Ellenberg**, chief of NINDS's Biometry and Field Studies Branch, received a Meritorious Presidential Rank Award for his "achievement in the publication of outstanding and highly influential contributions in applications of statistics to public health research" ... **Dr. Anthony S. Fauci**, director of NIAID and NIH associate director for AIDS research, received several awards: the William Beaumont Award of the American Medical Association, the 1989 Achievement Award of the American Association of Physicians for Human Rights, the 1989 National Medical Research Award of the National Health Council, and the Maxwell Finland Award of the National Foundation for Infectious Diseases ... **Dr. Joseph F. Fraumeni, Jr.**, associate director of NCI's Division of Cancer Etiology, received the Gorgas Medal at the annual meeting of the Association of Military Surgeons for "distinguished work in preventive medicine that has had a profound effect on the understanding of the epidemiology and etiology of diverse types of cancer" ... **Dr. George J. Galasso**, NIH associate director for extramural affairs, was honored by the Italian government for his accomplishments in the international scientific area and, in particular, to the Italian scientific

community ... **Dr. Harry V. Gelboin**, chief of the Laboratory of Molecular Carcinogenesis, NCI, presented two honorary lectures on a recent trip to Japan, as recognition for individual excellence in cancer research ... **Geoffrey E. Grant**, NIH grants policy officer and acting executive officer for NIDCD, recently received the Hartford-Nicholsen Award from the Society of Research Administrators (SRA) for "his willingness to experiment with innovative ideas (which) has helped to standardize and streamline the administration function, while improving research productivity" ... **Dr. Robert W. Gwadz**, head of the medical entomology unit, malaria section, in NIAID's Laboratory of Parasitic Diseases, was the invited speaker at the Centennial Symposium of the Entomological Society of America. In his talk titled "Insects and Public Health," Gwadz described how insect and arthropod-transmitted diseases affect our lives today and have done so throughout the course of human history ... **Dr. Jin H. Kinoshita**, NEI, was honored for his many contributions to vision research at an international symposium held at Columbia University's Arden House. Papers from the symposium will be published in *Experimental Eye Research* as a *festschrift*, a volume of scientific papers collected as a tribute to a scholar. Among his research accomplishments is defining the role of the enzyme aldose reductase in the development of a diabetic cataract and other complications associated with high blood sugar levels. He left his position as NEI scientific director in June. He is continuing his research at the institute as chief of the Laboratory of Mechanisms of Ocular Diseases ... **Dr. Ruth L. Kirschstein**, NIGMS director, is one of the "100 Most Powerful Women" featured in the September, 1989 issue of *Washingtonian* magazine. She also was selected by the Office of Personnel Management for the 1989 "Profiles in Excellence" series. She was cited for leadership that "established an international reputation for the institute and built consensus and support in the scientific community and Congress" ... **Dr. Michael J. Lenardo**, a senior staff fellow

in NIAID's Laboratory of Immunology, was granted an Investigator Award from the Cancer Research Institute for his "contributions to, and promise in, the field of immunology" ... **Dr. Donald A. B. Lindberg**, director of NLM, received the Nathan Davis Award from the American Medical Association. He was one of the first recipients of the award, which recognizes achievements in furthering "the art and science of medicine and the betterment of public health." He also received the Walter C. Alvarez Memorial Award, which was presented by the American Medical Writers Association in Boston for his "excellence in communicating health care advances and concepts to the public, and for distinguished service to the medical profession" ... **Dr. Lance A. Liotta**, chief of the Laboratory of Pathology, NCI, shared the Dr. Josef Stein Prize for 1989 for leading the research team that discovered and isolated five gene products that play a role in cancer invasion and metastasis. These gene products have proven useful in cancer diagnosis and are the targets of experimental treatments for metastasis ... **Dr. Harald Løe**, director of NIDR for the past 7 years, was appointed Commander of the Royal Norwegian Order of Merit by King Olav V of Norway. At a ceremony in the Embassy of Norway in Washington, D.C., he was presented with a gold cross and a diploma citing his contributions to the field of dental research both in the United States and in Norway. He is an internationally renowned expert on periodontal disease. ... **Dr. Mark L. Mayer**, NICHD scientist, received the Young Investigator Award from the Society for Neuroscience at its annual meeting in October for "his truly important work on NMDA receptors" ... **Dr. John D. Minna**, chief of the NCI-Navy Medical Oncology Branch, NCI, is the recipient of a 1989 clinical research award of \$50,000 from the Milken Family Foundation ... **Dr. Jay Moskowitz**, NIH associate director for science policy and legislation, received the Meritorious Presidential Rank Award for "outstanding leadership and significant accomplishments in the area of scientific policy as

Associate Director for Science Policy and Legislation and as a member of the NIH scientific community" ... **Dr. Abner L. Notkins**, director of intramural research for NIDR and a captain in the PHS, was named winner of the Philip Hench Award by the Association of Military Surgeons of the United States for his outstanding contributions in the field of rheumatology and arthritis by discovery of a component of the immune system and for providing new insight into the nature of rheumatoid factor. ... **Dr. Roger Porter**, deputy director of NINDS, received the Distinguished Medical Alumnus Award for his contributions to medicine from his alma mater, Duke University ... **Dr. David P. Rall**, director of NIEHS and the National Toxicology Program, was honored with the international Ramazzini Award of the Collegium Ramazzini from the town of Carpi, Italy, for his career contributions to occupational and environmental medicine ... **Dr. A. Hari Reddi**, chief of the bone cell biology section, Laboratory of Cellular Development and Oncology, NIDR, delivered the Samat Lecture at the Maurice and Gabriela Goldschleger School of Dental Medicine in Tel Aviv, Israel ... **Dr. Marc Reitman**, a postdoctoral researcher in NIDDK's Laboratory of Molecular Biology, received a Lucille P. Markey scholar award in biomedical science to enable him to continue his research on the organization of the beta-globin locus in chickens. He plans to characterize the regions of DNA that are important for the regulation of the beta-globin genes as a group ... **Dr. Steven M. Schnittman**, a senior staff fellow in NIAID's Laboratory of Immunoregulation, was granted one of four prestigious 1989 Young Investigator Awards from the American Society for Microbiology. His research on the immunopathogenesis of human immunodeficiency virus has significantly enhanced the understanding of how HIV causes damage to the immune system ... **Dr. Thomas A. Waldmann**, chief of the Metabolism Branch, NCI has been awarded \$250,000 for basic research from the Milken Family Foundation ... **Dr. Douglas B. Walters**, head of chemical health and safety for the National Toxicology

Program, part of Division of Toxicology Research and Testing at NIEHS, has been named the recipient of the 1989 national award for chemical health and safety from the American Chemical Society ... **Dr. Robert Wurtz**, chief of the NEI Laboratory of Sensorimotor Research, has been elected president of the Society for Neuroscience, a national organization with a membership of 14,000 scientists and physicians. He will begin his term as President in November 1990.

APPOINTMENTS AND PERSONNEL CHANGES

Diane E. Armstrong has been named director of NIH's Division of Equal Opportunity. She has worked for the federal government for 30 years and most recently she served as chief of the Equal Opportunity Division for the Office of Personal Management... **Dr. Carl Banner** has joined the Neuroscience and Neuropsychology of Aging Program at NIA as a health scientist administrator. He was previously a senior staff fellow in the Laboratory of Molecular Biology at NINDS. At NIA, he will direct the extramural research program on the etiology of Alzheimer's disease... **Kenneth Bastin** has been chosen chief of the spiritual ministry department at the Clinical Center... **Dr. Claudia Baquet** has been selected as associate director for the Cancer Control Sciences Program in NCI's Division of Cancer Prevention and Control. Prior to her appointment, she was chief of DCPC's Special Populations Studies Branch... **Dr. Faye J. Calhoun** has been appointed deputy chief for review in DRG's Referral and Review Branch. She came to the division in 1982, serving as executive secretary of the toxicology study section until 1987, when she became acting chief of the physiological sciences review section, RRB... **Dr. Marvin Cassman** has been named deputy director of NIGMS. Prior to this appointment he served as director of NIGMS' Biophysics and Physiological Sciences Program... **Dr. Deborah L. Claman** has joined the NIA as a health scientist administrator for the Neuro-

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science and Neuropsychology of Aging program. She came to NIA from the Office of Scientific Affairs at the National Institute of Alcohol Abuse and Alcoholism, where she was an extramural staff fellow, serving as an executive secretary for the neuroscience and behavioral research review group... **Dr. Lois K. Cohen** has been named extramural program director at NIDR. For the past 6 years she has served as NIDR's assistant director for international health, and chief of the Office of Planning, Evaluation and Communications. She succeeded **Dr. Marie U. Nylen**, who retired in July 1989... **Dr. Gyorgy Csako** of the clinical chemistry service at NIH, and who worked at NIH for 10 years, left to accept a staff position at Vanderbilt University's department of clinical chemistry... **Dr. Greg Curt** has been chosen clinical director of the National Cancer Institute. In addition to representing NCI's clinical perspective for the NIH community, he will supervise clinical care and medical training for the institute... **Sheldon A. Fishman** has been appointed chief of the research data and management information systems section in NIDR's Office of Planning, Evaluation and Communications. He succeeds **Dr. Kenneth C. Lynn**, who recently retired... **Dr. Ronald G. Geller** has returned to NHLBI as director of the Division of Extramural Affairs, which is responsible for advising the institute director on research contract, grant, and research training program policies; initial scientific merit review of applications and proposals; managing and processing grants and contracts; and representing the institute on overall NIH committees on extramural programs... **Dr. Robert A. Goldstein** has been appointed director of the Division of Allergy, Immunology and Transplantation for NIAID... **Dr. Albert D. Guckes** has been named deputy clinical director and chief of NIDR's patient care and clinical studies section. Prior to this appointment, he served as chief of NIH's Commissioned Officers Dental Clinic. He replaces **Dr. Michael Roberts**, who retired... **Dr. Benjamin F. Hankey**, appointed chief of the Cancer Statistics

Branch in NCI's Division of Cancer Prevention and Control, which oversees NCI's Surveillance, Epidemiology, and End Result Program and a variety of other survey and analytical work related to cancer surveillance. He replaced **Dr. John L. Young**, who has joined the cancer surveillance section of the California Department of Health Services, Emeryville, Ca... **Dr. Mark Israel**, head of the molecular genetics section of the Pediatrics Branch of NCI since 1984, has been named director of the new Preuss Laboratory of Brain Tumor Research, which is part of the University of California, San Francisco's Brain Tumor Research Center... **Dr. Leamon Lee** has been selected as the director of NIH's Division of Financial Management. He comes to NIH from Wright Patterson Air Force Base in Dayton, Ohio, where he had been working since 1961... **Dr. Young Jack Lee** has been named chief of the Biometry and Mathematical Statistics Branch in the Prevention Research Program at NICHD... **Dr. Catherine Lewis** was named a program administrator in the Genetics Program, NIGMS. In her new position, she will administer grants in the area of chromosomal organization and mechanics... **Dr. Michael D. Lockshin**, an authority on systemic lupus erythematosus, has been appointed director of the extramural program at NIAMS. Before coming to NIAMS, he was professor of medicine at Cornell University Medical College; attending physician and associate scientist at the Hospital for Special Surgery and a consultant in rheumatology at Memorial Hospital Sloan-Kettering Cancer Center... **Kathryn L. McKeon** has been named associate director for nursing at the Clinical Center. She has served at NIH for 10 years as chief of the mental health, alcohol, neurology, and aging nursing service and most recently as acting director for nursing... **David L. Mineo** has been appointed chief of the Grants Management Branch within the Division of Extramural Research and Training, NIEHS... **Dr. Anthony René** has been named to fill a newly created position, assistant director for referral and liaison, at NIGMS. Prior to this appointment, he

was chief of NIGMS Office of Review Activities... **Dr. Maryann Roper** was named NCI's deputy director on Oct. 8, after serving as acting director since October 1987. She joined NCI in 1985 as a senior investigator in the biologics evaluation section of the Cancer Therapy Evaluation Program. Afterwards, she became special assistant to the director of NCI in October 1986. She will, however, be leaving NCI in the future because her husband, **Dr. William L. Roper**, former head of the Health Care Financing Administration and White House adviser, has been selected as director of the Centers for Disease Control in Atlanta, Ga... **Dr. Helen R. Sunshine** has been appointed chief of the Office of Review Activities, NIGMS. She had most recently been chief of the biophysics section and a program administrator in NIGMS Biophysics and Physiological Sciences Program. Prior to that, she was deputy chief of the Office of Review Activities. She worked as a senior staff fellow in NIDDK before joining NIGMS... **Dr. Flossie Wong-Staal**, will be leaving to take the Florence Seeley Riford Chair for AIDS Research at the University of California at San Diego. This endowed chair is one of the few such professorships devoted exclusively to disease. She plans to establish a collaborative program to develop vaccines against the AIDS virus and will continue her work on the genes that regulate the reproduction and activity of the virus.

RETIREMENTS

Dorothy A. Curtis, the administrative officer supporting two major programs at NIDR, the Extramural Program and the Epidemiology and Oral Disease Prevention Program, has retired. She worked at NIH for 28 years, more than 20 of those years with NIDR in a variety of administrative positions. Her future plans revolve around her interests in community work, family and traveling... **Dr. Donald R. Fox**, chief of the Research Facilities Branch, NCI, has retired. He began work at NCI in 1972. He will join the firm of Maurice W. Perreault & Associates Inc. in Rockville, Md., as senior vice-

president for biomedical resources program and prearchitectural planning ... **Dr. Arthur R. Hand**, a senior research investigator with NIDR, retired from the PHS on Dec. 1 to become director of the central electron microscope facility at the University of Connecticut Health Center at Farmington. He will also have a faculty appointment in the university's department of pediatric dentistry. He has been with PHS and NIDR for more than 20 years and his current field of research is on salivary gland structure and function ... **Clinton Charles Jameson**, who was with Housekeeping and Division of Space Management, retired in December after more than 29 years at NIH. He is volunteering at St. Mary's Catholic Church, N.W. Washington, and then will travel in the South ... **Dr. David F. Johnson**, who was chief of the Laboratory of Analytical Chemistry, NIDDK, retired after 37 years at NIH. He came to NIH in 1952 and went from lab tech to Ph.D. chemist to section chief to lab chief, where he created an atmosphere conducive to scientific discovery... **Dr. Kenneth C. Lynn**, who was with NIDR for 21 years and in the PHS Commissioned Corps for more than 30 years retired Aug. 31. He served as chief of the research data and management information section, Office of Planning, Evaluation and Communications, NIDR. He also developed two online databases for NIDR: NIDR ONLINE and DENTAL-PROJ, which allows information to be distributed beyond NIDR to the research community at large. He will probably continue his affiliation with NIDR as a consultant ... **William Mathews, Jr.**, chief of the Financial Management Branch, NINDS, retired after 34 years with the institute. He spent his first 10 years at NINDS in the intramural research program. In 1965 he became a budget analyst and for the last 10 years has been the budget officer for NINDS ... **Dr. Michael W. Roberts**, NIDR deputy clinical director, retired Nov. 1 from the PHS after almost 25 years in the Commissioned Corps. He joined NIDR in 1981 as chief of the patient care section in the Clinical Investigations and Patient Care Branch. He has continued to hold that

position along with his present one since 1986. He has accepted a position as the graduate program director of the pediatric dental residency program at the University of North Carolina, Chapel Hill. At his retirement party, former Surgeon General C. Everett Koop presented the Surgeon General's Exemplary Service Medal to him ... **Dr. Robert A. Tolman**, endocrinology research program director at NIDDK, has retired. He came to NIH in 1969 as a grants associate in DRG. He became endocrinology program director at NIDDK after a year in the Myocardial Infarction Branch of NHLBI. He was for many years project officer with the National Hormone and Pituitary Program (NHPP). The NHPP collects and distributes pituitary hormones for research to scientists across the country and is an important resource for studies of hormone structure and function. His retirement plans include pursuing his interest in nature and wildlife and he plans to combine this with his other hobbies such as participation in the Montgomery County Barbershop Chorus, travel and volunteer work ... **Thomas A. Wood, Jr.**, administrative supervisor of the NCI cytopathology section since 1982, retired after 32 years of service at NCI. In 1958, he became a biologist in the cytodiagnosis service, Pathologic Anatomy Branch, which later became the Laboratory of Pathology. He served three 2-year terms on the NCI equal employment opportunity advisory group, including one term as the group's chairman.

DEATHS

Dr. Charles E. (Nick) Carter, who served as the scientific director of the intramural research program of NIEHS from 1979 to 1985, died Oct. 31 at his home in Waterville, Vermont. During his long career in science, he did extensive research in biochemistry, pharmacology, and in areas of nucleic acids and chemotherapy ... **Dr. Gary W. Combs**, 45, chief of the Development and Training Operations Branch of the NIH Training Center, DPM, died of cancer Oct. 11 at Sibley Hospital. He was responsible for

shaping the current NIH employee career development program. He implemented a technique for defining managerial competencies that lead to superior job performance and his work in this area enabled NIH to move from a training curriculum based on general management theory to one anchored in specific, performance-based competencies ... **Dorothy M. Grinspoon**, an administrative assistant with NIH from 1967 to 1980, died of cancer Oct. 14 at the home of her son in Bethesda. She lived in Tamarac, Fla. ... **Robert Lee Harding**, 75, of Frederick, a retired structural planning engineer with NIH, died Dec. 8 at Frederick Memorial Hospital ... **Ann Hartwell**, a former executive secretary of the federal government, died Oct. 20 of pulmonary fibrosis. She worked for the federal government for many years. Her first position was in the National Cancer Institute, where she was secretary to the first director, Dr. Carl Voegtlin. It was there that she met her husband, Dr. Jonathan Hartwell, a chemist who headed NCI's natural products division. She went on to join the Office of Interamerican Affairs and later worked in other jobs in the federal government. After she retired, she held various part-time secretarial positions ... **Edith Darby Crusoe Hogan**, secretary to the acting director of the Division of Engineering Services, died Oct. 26 following a brief illness. She transferred to NIH in March 1986, from Walter Reed Army Medical Center and began working in the Design and Construction Branch, Team 1, until her transfer to the Office of the Director, DES, in December 1988 ... **Rose R. Kushner**, 60, died of breast cancer Jan. 7, 1990, at Georgetown University Hospital. She was a writer who became an advocate for a 2-step surgical procedure for breast cancer after her own experience as a patient. From 1980 to 1986 she was a member of the National Cancer Advisory Board ... **Pope Arthur Lawrence, Sr.**, 76, an official of the U.S. Public Health Service who was assigned to the Environmental Protection Agency at the time he retired in 1977, died of lung ailments Sept. 26 at Suburban Hospital in Bethesda. He began

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his career with the PHS in Texas in 1942. He later worked in New Mexico and Utah, and was transferred to Washington in 1952 where he was assigned at different times to NCI and the Office of the Surgeon General ... **Loraine Frances Mahin**, 79, a retired administrative aide with NIH, died of aspiration pneumonia Dec. 10 at Potomac Manor Care Nursing Home in Potomac. Until she suffered a stroke in June, she was writing and illustrating her autobiography ... **Harriet Sayles Page**, 59, a former NCI medical science writer, died of cancer Sept. 4 at Mercy Catholic Medical Center in Philadelphia. From 1980 until 1985 she was the senior medical writer for NCI—analyzing its program, researching and developing speeches and other documents for the NCI director. She left NCI in 1985 to continue a career of freelance writing and painting ... **Dr. Bernard Sass**, 54, a veterinary pathologist with NCI, died of cancer Oct. 13 at his home in Frederick. He has worked at NCI since 1977 as a veterinary pathologist and most recently was on special assignment at the institute's facility in Frederick ... **Dr. Nathan A. Shock**, 83, a pioneer in modern research on aging, died of cancer Nov. 12 at Francis Scott Key Medical Center. In 1941 he joined NIH's first research program on aging. He directed the Gerontology Research Center in Baltimore and in 1975 was named scientific director of NIA. In 1976 he retired, but he remained active in research as scientist emeritus at NIA's Gerontology Research Center, which was renamed in his honor last June ... **Willie White Smith**, 82, a retired research physiologist who had a 34-year career at NIH and NCI, died of pneumonia Aug. 29 at Holy Cross Hospital in Silver Spring. At NIH she had studied the effects of radiation and the role of infection in radiation deaths ... **Ruth Ferguson Wilson**, 79, a political activist, died Nov. 29 at Suburban Hospital in Bethesda. She was the widow of Luke Wilson, who died in 1985 and whose parents, Luke and Helen, donated to the United States government the land on which most of NIH is built.

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Dr. Roger A. Brumback, a clinical associate in the Medical Neurology Branch (NINCDS) 1975-1977, writes: "I was promoted to Professor of Pathology at the University of Oklahoma College of Medicine in July 1989. I am also Chief of the Neuropathology Service. I have recently co-edited a book entitled *The Cerebrospinal Fluid* published by Kluwer Academic Publishers. My wife Mary and I have just had published by Year Book Medical Publishers a book entitled *The Dietary Fiber Weight Control Handbook...*"

Dr. Jelleff C. Carr, NIMH, Psychopharmacology Service Center, 1957-63, writes that he is now "Secretary of the International Society of Regulatory Toxicology and Pharmacology."

Dr. Stanley N. Cohen, who was a clinical associate at NIAMD from 1962 to 1964, recently was the recipient of the National Medal of Technology presented to him by President Bush for his work with Dr. Herbert W. Boyer, who also shared the award. They were honored "for their fundamental invention of gene-splicing techniques, which allowed replication in quantity of biomedically important new products, and beneficially transformed plant materials." Drs. Cohen and Boyer also shared the National Biotechnology Award for their work.

Dr. Susan E. Cullen, NCI, DCBD, Immunology Branch, 1974-76, writes: "For the last few years I have had the wonderful opportunity of returning to my NIH home as a member of the Board of Scientific Counselors for DCBD. It has been a great opportunity because I have had a chance to appreciate the intramural effort from a very different point of view than I did when I was there."

Dr. Martin M. Cummings, who was director of NLM, writes: "After 30 years we are moving from Rockville to live in Chesapeake Beach, Md., in the summer and Longboat Key, Florida, in the winter. We hope to keep in touch with NIH through the Alumni Association."

Dr. Norman H. Edelman, a research associate from 1963 to 1965, at the Gerontology Branch of the National Heart Institute was recently appointed dean of UMDNJ-Robert Wood Johnson Medical School.

Dr. Robert H. Friedman, NIDR, research associate, 1970-72, states that he is "Associate Professor of Medicine and Public Health at Boston University School of Medicine and Chief, Medical Information Systems Unit, an R&D laboratory for computer applications in clinical medicine and clinical research."

Dr. Garry A. Gallis, NIAID, staff associate, 1968-70, is Administrative Director of the Duke AIDS Clinical Treatment Unit (NIH-ACTG), the Director of Clinical Research at Duke CFAR, and the Director of Antimicrobial Evaluation Unit.

Dr. William A. Gibson, NIDR, independent investigator, 1964-76, was recently appointed as Assistant Dean, Graduate Studies and Research at Baylor College of Dentistry, in Dallas.

Dr. I. David Goldman, NCI, Laboratory of Chemical Pharmacology, 1966-69, writes: "July 1, 1988, I was appointed Director of the Medical College of Virginia Massey Cancer Center."

Dr. Javier Gonzalez, who was an HSA intern in 1988, writes that he is currently the "Director of the Research Program in Health Sciences, of the

Department of Health and Social Services of the Generalitat de Catalunya in Barcelona."

Dr. Daniel M. Goodenberger, NCI, Metabolism Branch, 1976-78, writes that his current position is "Assistant Professor of Medicine, Washington University, Assistant Physician and Associate House Staff Director, Barnes Hospital, and Program Director, Pulmonary Fellowship, Washington University School of Medicine."

Dr. Ronald B. Herberman, NCI, 1966-85, established "the Pittsburgh Cancer Institute (PCI), now an NCI-designated clinical research cancer institute specializing in innovative approaches to cancer research and treatment. Along with directing PCI, Dr. Herberman holds a joint professorship in medicine and pathology at the University of Pittsburgh School of Medicine and serves as a staff physician at Presbyterian-University Hospital of Pittsburgh." Currently he "serves as principal investigator for a five-year, six million dollar NIH Program Project to elucidate the factors that predispose organ transplant recipients to develop cancer."

Dr. Bernard L. Horecker, NIAMD, former chief of the Laboratory of Biochemistry and Metabolism, writes: "I will be retiring from my present position as Dean of the Graduate School of Medical Sciences, Cornell University Medical College on October 31, 1989. I will assume the title of Professor Emeritus of Biochemistry on November 1, 1989."

Dr. Rachel I. Huot, NCI, 1977-82, states that she "Would love to see a job placement section!" (in *Update*)

Dr. Newton E. Hyslop, Jr. an NIAID research associate in the Laboratory of Immunology from 1963 to 1965, reports that since 1984 he has been the chief of

the Infectious Diseases Section at Tulane School of Medicine and since 1987 the principal investigator at the Tulane-LSU AIDS Trials Unit.

Clifford F. Johnson, who was at NIH from 1957 to 1974, writes that he "and Ruth Johnson have recently moved to Oxford, Pa. Thanks to progress in medicine attributable to NIH programs, they continue to cope successfully with the combined chronic assaults of Parkinson's, rheumatoid arthritis, Paget's disease, hypertension and bladder cancer. They winter in Naples, Florida."

Dr. Roger P. Maickel who was section head at the Laboratory of Chemical Pharmacology at the National Heart Institute before he left NIH in 1965, writes: "I am presently wearing two hats. In addition to my academic post as Professor of Pharmacology and Toxicology in the School of Pharmacy and Pharmacological Sciences at Purdue, I also serve half-time as Director of the University Laboratory Animal Program under the Vice-President for Research."

Dr. Stanley R. Mohler, who worked in the Center for Aging Research from 1957 to 1961, writes: "I worked in the Center for Aging Research when it was new and had only five employees ... Our tasks included promoting and assisting the development of interdisciplinary centers of research on aging (examples - Duke University, Einstein Medical School, and Western Reserve - in 1960 this latter program received a commitment of more than \$2 million, the largest NIH research grant up to that time - so large that Secretary Arthur Flemming, DHEW, personally presented it in a ceremony) ... My NIH experience was a major career opportunity for development. The FAA invited me (1961) to be the Director of its Civil Aeromedical Institute in Oklahoma City and I served there 5 years and transferred to its Washington, D.C., headquarters for

13 more. I am now a professor of Community and Aerospace Medicine, Wright State University."

Dr. Ernest J. Moore, who was executive secretary and program administrator at NINDS, 1977-83, writes that he "recently completed six years as Chairperson, Dept. of Audiology & Speech Sciences, Michigan State University, East Lansing. He resigned his position as Chairperson (July, 1989), in order to devote full-time to research & teaching. Presently, Dr. Moore is using neurotoxins (e.g., tetrodotoxin) & competitive antagonists for NMDA & Non-NMDA activity at the cochlear hair cell-auditory synapse."

Dr. W. Glen Moss, who was at NHLBI from 1961 to 1980, writes: "Still working on genealogical background for me and Harriet in family names (Moss, Crow, Roberts, Bastin, Davenport, McCormick, Ringo, Bourn), (King, Landes, Hampton, Worchester, Davis, Vernon). I am 10th generation on this continent in the Moss, Ringo, and Bastin lines."

Dr. Henry A. Nasrallah, who was a clinical associate in the Division of Intramural Research at NIMH from 1975 to 1977, is currently professor and chairman of the Department of Psychiatry at Ohio State University and is the Editor-in-Chief of *Schizophrenia Research*, now in its second volume.

Dr. John I. Nurnberger, Jr., who was chief of the NIMH Outpatient Clinics, writes that his current title is Professor of Psychiatry and Medical Neurology and Director of the Institute of Psychiatric Research at Indiana University School of Medicine.

Dr. Margaret Pittman, Division of Biologics Standards, 1936-1971, writes that on June 9, 1988, she received "the (See *Members* p. 22)

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hours rather than days or weeks. PCR was invented by scientists at Cetus Corporation, building directly upon results of basic biomedical research that NIH funded over the past several decades. By enabling scientists to detect short pieces of DNA easily with high specificity and sensitivity, PCR can be used in many areas of laboratory and clinical research. These include detecting HIV infection in the critical latent period before antibodies develop; improving the ability to diagnose genetic diseases; determining how frequently oncogene activation contributes to the development of cancer; studying gene expression during early embryogenesis; clarifying evolutionary biology through the study of "ancient" DNA; and identifying—or exonerating—suspects in rape or murder cases.

PCR has had a profound effect on gene mapping and therefore on the joint effort by NIH and the Department of

Energy to map and sequence the genomes of humans and other important organisms. Last fall, PCR was made the cornerstone of a proposal to "translate" the information from the various physical mapping methods into a common language known as sequence-tagged sites (STS). These sites are short tracts of unique DNA sequence that can be identified by PCR and that can act as landmarks on the physical map. Any piece of DNA that has been tagged with a PCR site can be easily isolated in any laboratory that needs it. Over the next year, we will pay close attention to how well the STS concept is accepted and how it affects strategies for completing the genome project.

The NIH genome program is being led by the National Center for Human Genome Research, which was established on Oct. 1 with Nobel laureate Dr. James Watson as director and Dr. Elke Jordan as deputy director. The center coordinates NIH intramural and extramural genome research, as well as being the HHS focus for federal interagency coordination and collaboration with industry, academia, and non-profit organizations, and with international groups that support genome research. NCHGR also is expanding into areas such as center and training grants; and, starting this fiscal year, at least 3 percent of NIH's genome program budget will be available for projects that address related ethical, legal and social issues.

Personnel Changes

Dr. James B. Wyngaarden, who served as NIH director for more than seven years, resigned effective July 31. He played a key role in shaping the emergence of biotechnology on the national and international scene, led the massive research effort against AIDS from the beginning, and took significant steps to minimize the management of research by others than the scientists.

During his tenure, NIH's overall appropriation doubled, and the intramural budget did almost the same. One of his major accomplishments was initiating NIH's human genome program. He was a very active, influential spokesman for biomedical research and initiated the physician- and dentist-scientist training programs.

Wyngaarden recently was confirmed by the Senate as associate director for life sciences in the Office of Science and Technology Policy at the White House. The nation thus will continue to benefit from his wisdom and dedication.

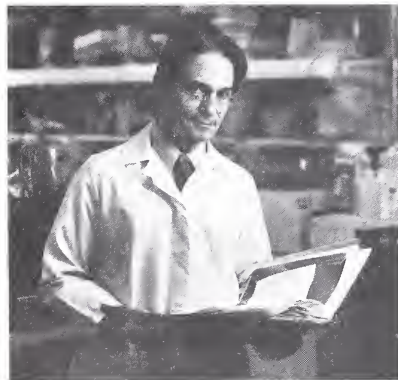
NIH is fortunate that almost all of the institutes and divisions have regularly appointed directors. This past year, Dr. Samuel Broder, an intramural scientist for 17 years, was appointed director of NCI. He had been associate director for its clinical oncology program; he and his coworkers were the first to find that azidothymidine (AZT) was active against HIV infection and subsequently developed the second anti-AIDS drug, dideoxynosine (DDI).

AIDS Research

NIH continues to lead the federal government's research efforts against AIDS through studies conducted by our intramural scientists, grantees and contractors. Almost every component of NIH is now involved in AIDS research.

This past year, encouraging progress was made on the drug front. Two multicenter clinical trials—sponsored by the National Institute of Allergy and Infectious Diseases—have shown that AZT can delay disease progression in HIV-infected persons with fewer than 500 T4 cells, whether symptomatic or asymptomatic, with minimal side effects.

One trial showed that AZT significantly slows the progression of HIV disease when given to persons with early AIDS-related complex (ARC). The other study—the largest AIDS clinical trial yet conducted—showed that early treatment



Dr. Henry Metzger, NIAMS scientific director, and his colleagues determined the complete structure of the IgE receptor that is critical in initiating allergic reactions. They then developed a tissue culture system that expressed human IgE-binding receptors. The system can be used to search for a new class of drugs that will prevent allergy attacks rather than relieve symptoms once an attack has occurred.

with AZT can slow progression of the disease in asymptomatic HIV-positive individuals with a low T4 count.

These studies support previous recommendations that individuals at high risk of HIV infection should be tested and that those with positive results should be under the care of a physician who can monitor their immune status and recommend appropriate treatment.

As a result of these studies, an estimated 600,000 HIV-infected Americans with early or no symptoms of the disease could benefit from AZT treatment.

NCI intramural scientists have been the leaders in developing and testing anti-retroviral agents for AIDS.

NIAID has established 18 AIDS treatment research programs based in the communities where people with AIDS live and receive their medical care. The program will enlist many community-based physicians and their patients in studies of AIDS drugs. The program will reach out to all persons with HIV infection, including those in

population groups that have been underrepresented in AIDS studies: blacks, Hispanics, women and IV drug users. By participating in these projects, HIV-infected people will gain increased access to experimental AIDS drugs.

Until now, federally funded clinical trials of experimental AIDS therapies have been conducted by investigators at NIH or at university-based research hospitals. Studies conducted by the new community-based programs will complement the academic ones and must meet similar scientific standards.

Industrial Relations

The remarkable biological and technological revolution we have been experiencing has led to new relationships among government, academic and industrial scientists.

Implementing the Technology Transfer Act of 1986, NIH has shown the way among government laboratories in facilitating the transfer of technology to the private sector for further development and commercialization, thanks

primarily to the foresight and efforts of Dr. Philip Chen, NIH associate director for intramural affairs. Currently, the NIH has about 100 CRADA's—cooperative research and development agreements—with industry and an equivalent number in various stages of negotiation. Under a CRADA, federal laboratories and private sector companies conduct research jointly; the company may acquire an option from NIH at the outset to negotiate for exclusive patent rights. As an incentive, federal scientists can receive up to \$100,000 annually as income from such patented, licensed inventions.

A very important CRADA involves a rabbit model for HIV infection that was developed by NIAID scientists. They infected the animals by injecting them with human HIV-infected T cells. The intramural team has identified the parameters of infection necessary for standardized use of this model in AIDS vaccine and drug development and has filed for a patent covering these procedures.

The HIV-infected rabbits do not become ill although their immune systems are altered. However, when the animals are coinfecting with HIV and HTLV-I, a retrovirus that causes an adult T-cell form of leukemia-lymphoma, they show signs of illness including weight loss, diarrhea, neurologic dysfunction and a rapidly spreading adenocarcinoma. This may be akin to the situation in HIV-infected individuals who then become infected with HTLV-I or other pathogens.

One problem with the rabbit model is that its lymphoid cells do not express determinants that react with antibodies directed against human CD4, the receptor by which HIV enters human cells. In an effort to enhance the model's value in testing drugs and therapeutic strategies that are based on blocking the interaction between HIV and human CD4, the NIAID scientists



Transgenic rabbit developed for HIV infection research by NIAID scientists.

(continued p. 20)

(continued from p. 19)

are collaborating with Transgenic Sciences, Inc., which has the expertise to create transgenic animals. The company has already obtained a full-length clone of the human CD4 gene as stipulated in the CRADA. The NIAID scientists will conduct *in vitro* studies of the "candidate genes" prior to any attempts by the company to insert them into rabbit embryos. Since the NIAID scientists do not have sufficient personnel or containment facilities to create and maintain these transgenic animals, this CRADA is a marvelous example of how government and industry scientists can team up to produce an extremely useful tool for biomedical research.

Another exciting CRADA is under negotiation between the Division of Computer Research and Technology and Star Technologies, Inc., to develop a computer specifically designed for simulating the dynamics of macromolecular interactions. The machine, which has a target price of \$150,000, will be one-hundredth the cost of modern supercomputers, yet—for solving these specific problems—will be as powerful as 20 to 30 Cray processors.



DCRT's Dr. Bernard R. Brooks has designed a dedicated computer for macromolecular modeling that will be one-hundredth the cost of today's supercomputers yet be as powerful as 20 to 30 Cray processors.

The heart of the computer—GEMMSTAR—will be custom-designed silicon chips that, when connected, will embody the computation-intensive part of a computer program (Generate, Emulate, and Manipulate Macromolecules) developed by the DCRT scientists. They have applied for a patent for the machine and the chips, which essentially translate the GEMM software into a piece of hardware that can then be plugged into workstations already used by molecular modelers.

GEMMSTAR will be able to handle simulations of proteins and other macromolecules that contain up to 65,000 atoms—a number beyond the realistic capacity of today's supercomputers. This will tremendously increase scientists' ability to simulate the chemical and physical properties of proteins and nucleic acids and to predict or explain their behavior. Thus, GEMMSTAR should be particularly valuable for interpreting crystallographic or nuclear magnetic resonance data for viral proteins such as those in HIV, and for rationally designing effective drugs and vaccines without the time and expense needed to synthesize and test hundreds of compounds in the laboratory. Chemical and pharmaceutical companies and universities are expected to be the major market for this invention.

NIH is developing guidelines for avoiding conflicts of interest on the part of researchers, consultants, and other participants in research projects at awardee institutions. We want to enable the results of government-supported research to move rapidly to commercialization wherever appropriate while simultaneously ensuring that research goals are not unduly influenced by the possibility of financial gain. This is an extraordinarily complex subject and will require considerable consultation with affected parties to find the balance point.

Scientific Integrity

In recent years, several instances of dishonest practices in biomedical science have received considerable publicity. Misconduct in science is rare, but when it occurs it undermines the public's faith and can jeopardize subsequent research and even proper medical treatment. Clearly, promotion of scientific integrity must be a joint effort on the part of the government and the institutions where research is performed.

Secretary Sullivan has issued regulations that became effective in November concerning misconduct in science—that is, the fabrication, falsification, plagiarism or other practices that seriously deviate from those commonly accepted in research activities. This definition does not include honest error or legitimate differences in interpretations of data.

Awardee institutions will have the primary responsibility for promoting scientific integrity and for investigating, reporting and resolving allegations or suspicions of scientific misconduct. DHHS retains the ultimate responsibility and authority for monitoring such investigations and assuming responsibility if appropriate or necessary. Each institution must file an assurance—and update it annually—that it has policies and procedures in place for dealing with and reporting any possible misconduct in science by their staffs.

To monitor and investigate all misconduct in science cases in the PHS—which includes any on the NIH campus and at awardee institutions—the Office of Scientific Integrity (OSI) was established within the Office of the Director, NIH. OSI will collaborate with the Office of Scientific Integrity Review (OSIR), which was established in the Office of the Assistant Secretary for Health Dr. James Mason.

OSIR will develop PHS policies and procedures for dealing with misconduct

in science, see that the PHS research agencies implement them, review OSI's final reports of investigations, and make recommendations to the assistant secretary regarding sanctions.

Use of Animals in Research

It is tragic that, at a time when biomedical research has so much to offer, animal rights activists want to stifle it by intimidating scientists or trying to get laws passed that make it difficult or impossible to use animals in research. We at the NIH believe that the use of laboratory animals is both a scientific necessity and an ethical imperative and that good animal care is an indispensable part of good science.

In 1989 NIH held a conference on modeling in biomedical research. The panel of experts evaluated model systems—including vertebrates and invertebrates, cell cultures and physical analogs, mathematical models and computer simulations—that have been used in two of the most active areas of research, cardiovascular disease and diabetes. They concluded that, although modeling is extremely valuable, the validity of every proposal about the nature and mitigation of human disease must be verified by testing in an appropriate mammalian model system. Furthermore, they believe it is extremely unlikely that these remarkable tools will substitute, to any significant extent, for experimental vertebrate animals anytime in the foreseeable future. This message must be communicated to the public, which is receiving much misinformation about the use of animals in research.

Last April Dr. Wyngaarden approved the NIH Animal Welfare Initiative: 1989-1990 Goals and Action Plan. The plan involves efforts to ensure adequate resources to upgrade NIH's animal care facilities and to train laboratory personnel to improve the standards of animal care.

NIH awardee institutions also must comply with the PHS animal welfare policy on the care and use of laboratory animals. To foster greater understanding and compliance with that policy, NIH continues to conduct regional workshops for administrators and investigators from awardee institutions.

Also in 1989, Dr. Mason appointed Dr. Fred Goodwin, head of the Alcohol, Drug Abuse and Mental Health Administration, and me to cochair a PHS-wide animal welfare working group. We are developing an action plan whereby all PHS agencies will inform the public about the importance of animals in research and testing and about the humane care and use of animals.

Congress amended the Animal Welfare Act in 1985 with the intent of improving standards for laboratory animals. NIH has played an integral role in harmonizing these regulations with the PHS Animal Welfare Policy through consultations with the Department of Agriculture. Parts I and II of the amendments were rewritten and became regulations on Oct. 31. Part III, which deals primarily with the psychological well-being of nonhuman primates and exercise requirements for dogs, is still under development.

We must not let anti-science feelings among a misguided minority clog the engine of biomedical research at a time when it is moving more rapidly than ever before to conquer disease and disability. As we enter the nineties we must also help to upgrade the quality of science education in our primary and secondary schools and stimulate young people from all racial and ethnic groups to seek careers in science and engineering. The health of our nation and the world depends on it.

This article was prepared with the assistance of Bobbi Bennett, Office of Communications, OD.

HHMI-NIH Collaboration Continues

The Howard Hughes Medical Institute-NIH Research Scholars Program is now in its fifth year; 35 new participants recently arrived on campus. The program, formerly run by Dr. George Cahill and now under the direction of Dr. Don Harter, exposes medical students from around the country to intramural research at the NIH campus.

This year the HHMI Medical Student Research Training Fellowship Program began. It enables medical students to conduct research at institutions in the United States apart from NIH. Forty-seven participants form the inaugural class of this program.

R&W Events Hotline

To help keep NIH'ers informed of all that it does, R&W offers a 24-hour hotline. Dial 496-6598 to hear an updated listing of all the fun things R&W has planned for you!

Novello Confirmed as Surgeon General

On Mar. 1, 1990, Dr. Antonia Novello, deputy director of the National Institute of Child Health and Human Development, was confirmed as surgeon general. She will be the first woman and first Hispanic physician to hold the post of surgeon general. Dr. C. Everett Koop, the surgeon general since 1981, resigned Oct. 1, 1989.

Members (continued from p. 17)

Medical Alumni Association of the University of Chicago Medical Alumni Award for Distinguished Service in recognition of contributions of distinction to medicine and society."

Dr. Denis J. Prager, who was at NIH from 1960 to 1983 is currently Deputy Director, Health Program for the MacArthur Foundation. His responsibility is "for funding programs in mental health research and research on the biology of parasitic diseases."

Dr. Mark L. Rosenblum, NCI, Baltimore Cancer Research Center, 1970-72, is currently at the University of California, San Francisco, where he is "Professor of Neurosurgery and Chairman, Joint Section on Tumors of the AANS & CNS."

Dr. Gunnar Ryge, who was at NIH from 1969 to 1972, is "Professor Emeritus, University of the Pacific, School of Dentistry" and "was the recipient of the Research in Prosthodontics Award for 1989, awarded by the International Association for Dental Research at its 67th General Session June 28-July 1 in Dublin, Ireland."

Dr. John L. Sever, who was chief of the Infectious Disease Branch of NINDS, writes: "Retired from NIH in September 1988 to become Professor and Chairman, Department of Pediatrics, George Washington University Medical School, and Senior Vice-President for Medical and Academic Affairs, Children's Hospital, Washington, D.C."

Dr. Mathilde Solowey, who was at NIH from 1959 to 1979, writes that she has held three positions: "(1) from 1980-81 I was a paid research grants consultant to NYU Medical Center (2) from 1981-84 or 85 I was a paid research grants consultant to Mt. Sinai



Gathering at the Cloister on Dec. 8 for a meeting of NIHAA's Washington chapter are (from l) Dr. Abner Notkins, chairman of NIHAA's organizing committee; Dr. Norman Salzman; guest speaker Dr. Purnell W. Choppin, president of the Howard Hughes Medical Institute, and his wife Joan; and Dr. Mary E. Sears. Choppin reported that HHMI will spend some \$264 million in 1990 to support 200 investigators and 1,600 support staff at 44 sites across the United States. HHMI is the nation's largest nongovernmental supporter of medical research.

Medical School (3) from 1985 to date I have worked as a special consultant on a research project on *cluster studies* at the National Multiple Sclerosis Society - This is a volunteer activity rather than a paid service, so that I can take time off as the need occurs and not feel committed as I would if I were paid. I mention these activities ...to indicate to retirees that there is life after retirement from NIH, provided you look for it."

Dr. David A. Stevens, NCI, Viral Carcinogenesis Branch, 1967-69, writes that he is presently Professor of Medicine (Infectious Diseases) at Stanford University Medical School.

Dr. Louis B. Thomas, who was with NCI from 1948 to 1978, writes: "(1) Since retirement, I have been active in the Ft. Collins Lions Club. In particular I have worked with & supported the various programs of the Rocky Mountain Lions Eye Bank, which is located in Denver and serves a large Rocky Mtn.

region including Colorado, Wyoming and parts of Montana & Nevada. (2) In May 1987 I was awarded an Honorary Ph.D (Doctor of Sc.) by the College of Idaho, Caldwell, Idaho. I graduated from C of I in 1940."

Dr. Gary M. Williams, a staff associate at NCI from 1969 to 1971, writes that he is "now Director of Medical Sciences at the American Health Foundation, Valhalla, N.Y." and "in October chaired a working group at the International Agency for Research on Cancer on evaluation of carcinogenicity of pharmaceuticals."

Dr. Dawn Butler Willis, a chemist at NHI, 1957-58, writes: "In 1968 I obtained a Ph.D. in Microbiology from the University of Tennessee. After 20 years of bench research, I recently accepted the position of Scientific Program Director at the new American Cancer Society National Headquarters in Atlanta, Ga."

CALENDAR

FEBRUARY—MARCH

An exhibit on "To Your Health" — historical public health posters from 1900 to 1990 — is on display in the inner lobby of NLM (Bldg. 38 on the NIH campus).

An exhibit on "The History of Cataract Surgery" is on display in the front lobby of NLM. For more information about both exhibits call (301) 496-5405.

APRIL

Monday, April 23-Tuesday, 24, 1990
"The Medicinal Muses: The Therapeutic Uses of the Arts and Humanities."
Sponsored by NLM and University of Maryland. For more information please call Robert Mehnert, Public Information Office, NLM, (301) 495-6308.

Thursday, April 26, 1990, 1:30 p.m.
Lipsett Amphitheater, Bldg. 10
The Third Paul Ehrlich Lecture
Sponsored by FAES. Topic: "RNA and DNA Antagonists As Chemotherapeutic Agents." Speaker: Dr. George H. Hitchings, President, The Burroughs Wellcome Fund, Scientist Emeritus, The Burroughs Wellcome Company and recipient of the Nobel Prize in Medicine and Physiology 1988. Reception following at the Cloister.

MARCH—MAY

NIH Consensus Development Conferences

Monday, March 19 -
Wednesday, March 21, 1990
"Surgery for Epilepsy"(Sponsored by NINDS and OMAR)

Monday, March 26 -
Wednesday, March 28, 1990
"Treatment of Sleep Disorders of Older People"(Sponsored by NIA and OMAR)

Wednesday, April 16 -
Friday, April 18, 1990
"Adjuvant Therapy for Patients with Colon and Rectum Cancers"(Sponsored by NCI and OMAR)

Monday, May 21 -
Wednesday, May 23, 1990
"Intravenous Immunoglobulin: Prevention and Treatment of Disease"
(Sponsored by NIAID and OMAR)

All of these conferences are held in Masur Auditorium, Bldg. 10. For more information call (301) 496-1143.

NIHAA EVENTS

MARCH

Tuesday, March 13, 1990

A talk with slides by Dr. Fitzhugh Mullan on his book "Plagues and Politics: The Story of the United States Public Health Service" at the Bethesda Naval Officer's Club, from 11:30 a.m. to 2:00 p.m. - reservations necessary. Tickets \$15 per person.

APRIL

Sunday, April 8, 1990

Baroque Music played on period instruments by the Ensemble La Guerre at Strathmore Hall, 10701 Rockville Pike. Preceded by a light buffet 5:00-6:30 p.m. Grosvenor Park Party Room, 10500 Rockville Pike. Limited number of tickets available at \$17.50.

MAY

A "Mixer" sponsored by NIHAA at the American Federation for Clinical Research meetings, May 4-7, 1990, Washington, D.C., will be held on Sunday, May 9, 1990, 5:30-7:30 p.m., in the Wisconsin Room, Sheraton Washington Hotel.

Upcoming in 1990 at NIH - Anniversaries that will be covered in the *Update* are: NIH Credit Union, 50 years, R&W, 45 years, NIDDK and NINDS, 40 years.

For more information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.



Two large tulip poplars fell on the roof of the Children's Inn shortly after noon on Tuesday, Nov. 21, 1989, in the aftermath of a windstorm. No one was hurt and damage to the inn was estimated at \$100,000-\$150,000. The opening of the facility was delayed by several months and the inn is now scheduled to open in June 1990.

Panel (continued from p. 11)

Another wrote, answering the same question, "Flexibility in decisionmaking about research programs that has enabled the NIH to respond to changes and opportunities in science."

One public comment, which drew a rebuttal by Secretary Sullivan, read:

"The decline in financial support for the NIH due to reductions in nondefense discretionary spending imposed by the deficit" is a major challenge facing NIH now and in the future.

"That's not really true," Sullivan corrected. "I understand that it may be the perception by some, but in fact the average in terms of dollars (marked for biomedical research at NIH) has actually increased every year. The cost of research outstripped the rate of increase. The cost of specific grants has increased."

Public ideas of what kind of individual the NIH director should be were varied and might also have described superheroes.

According to one respondent, the NIH director should be "imaginative, innovative and creative (able to inspire both lay persons and scientists)."

Another thought the person who directs NIH should be "passionate about the challenge of working cooperatively to resolve differing viewpoints."

A third reply stated that the director should be "possessing of 'limitless energy,' charisma, enthusiasm, and superb interpersonal skills."

Others felt that the position needed to be filled by "a visionary ... who understands what is ideal and what is practical," or one who is "able to approach political issues with 'civic spirit,'" or one who is "understanding of the 'real' world within which NIH functions and therefore be selected from outside the Agency."

The reading of the last comment was followed by laughter from the panel and good-natured debate about what exactly the term "real world" meant.

The next agenda item, a discussion on salary and other compensations for the NIH director, was led by former NIH director Fredrickson. The panel unanimously supported raising the director's salary.

"This is a critical issue," Fredrickson said. "Clearly, we are competing with academic scales and not with other federal positions."

Sullivan agreed with the panel about raising the NIH director's salary but cautioned that conflicts among other federal agencies that also do research may arise, necessitating across-the-board raises.

"The need for salary adjustment is clearly understood," said the secretary, who had just attended a budget press conference where he had announced a \$348 million increase to \$7.9 billion for NIH in fiscal year 1991. "(However), other agencies such as Energy also have similar problems in compensating their scientists."

"We really don't have to look at increasing salaries all across the board," noted Vagelos. "It's really the top level (positions) that suffer."

Fauci put the problem in perspective: "Over the last 10 years, we have been unable to recruit any scientist from the outside at the branch chief level. That is very serious."

Dr. Linda Wilson, president of Radcliffe College, said, "It calls for a bold move, even if one has to label it experimental."

"I think we all agree that this issue is having a chilling effect on the recruitment efforts for this position," concluded Mason.

Another area that reportedly has seemed less than attractive to prospective NIH directors is the amount of authority that the position carries, particularly in the area of disbursing NIH's budget allotment.

To improve the perception that the director has little influence in money matters, the panel proposes to add to the

duties of the position the power to distribute monies from a discretionary fund. A fund in the amount of \$20 million was suggested.

Dr. Samuel Thier, president of the Institute of Medicine at the National Academy of Sciences, described the intent of the proposal:

"The discretionary fund is a mechanism to be used for risk taking and for funding unusual ideas that might not make it through the peer review process."

Setting a term of office for the NIH director was also discussed. Fredrickson advocated a 6-year term.

"I think it's a job that we want to depoliticize," said Dr. Paul Rogers, senior partner for the law firm Hogan and Hartson in Washington, D.C., and a former congressman who had NIH oversight responsibilities. "It's very smart for us to recommend a 6-year term."

Thier, adding his comments on setting a term, shed light on what might be the core of the struggle to find an NIH director:

"It's a question of primary perception. Will it (the position) be seen mainly as an expert in biomedical research or will it be seen mainly as part of the administration?"

The meeting also solicited additional suggestions for strengthening the director's position from the committee and heard comments from observers. The next advisory committee meeting is scheduled for late February.

If you did not receive the first or second issue of *NIHAA Update* and would like a copy, please notify the editor at 9101 Old Georgetown Rd., Bethesda, MD 20814.

Two Publications of Interest to NIHAA Members

Plagues and Politics: The Story of the United States Public Health Service by Dr. Fitzhugh Mullan, which chronicles the 190-year history of the Public Health Service (Basic Books, 224 pages, 215 illustrations, \$26.95).

The Commissioned Officers Association of the USPHS is offering copies of *Plagues and Politics* at a price of \$18.00, which is a saving of 1/3. Requests should be addressed to COA at 1400 Eye Street, N.W., Suite 725, Washington, D.C. 20005, (202) 289-6400.

Mullan will be speaking on Mar. 13, 1990, at a luncheon sponsored by NIHAA at the Bethesda Naval Officer's Club—copies of the book will also be available at that time.

He received his undergraduate degree in history from Harvard University and his medical degree from the University of Chicago. He is trained as a pediatrician. He has been a member in the Commissioned Corps of the United States Public Health Service since 1972. At NIH from 1982 to 1984, he was the chief medical officer at the Office of Medical Applications of Research, OD. His new position is acting director, The Center for Medical Effectiveness Research, Agency For Health Care Policy and Research, Parklawn Building.

Recollections, a new book written by former NIH associate director Dr. Norman Topping with Gordon Cohn, is now available from the University of Southern California.

Topping, who is perhaps best known for his rickettsial diseases research that included preparing an antiserum against Rocky Mountain spotted fever and leading the NIH effort during World

War II to develop a vaccine against epidemic typhus, served as associate director of NIH from 1948 to 1952. He then moved to the University of Pennsylvania as the vice president for medical affairs. In 1958 he was named president of the University of Southern California. From 1970 to 1980 he served as chancellor of USC, and since then has held the post of chancellor emeritus.

Copies of *Recollections* may be obtained for \$18 each by writing to Topping Recollections, 1420 San Pablo Street, Rm. A302, Los Angeles, CA 90033-1042. The FAES bookstore, Bldg. 10, B-1 level, will also be selling the book.

How Many Labs at NIH?

Overall there are 258 laboratories, branches and departments in the intramural program at NIH, with a total staff of 10,862, of whom 1,331 are permanent scientists and 2,717 occupy ceiling-free positions (ones that don't take up an FTE—full-time equivalent—slot). This is according to the minutes of a recent meeting of the scientific directors.

Have You Moved?

If your present address differs from that shown on the address label, please send your new address to office, 9101 Old Georgetown Rd., Bethesda, MD 20814.



Accepting an award on behalf of all NIH employees who contributed to the 1990 Combined Federal Campaign is Jack Mahoney, NIH associate director for administration. Phyllis Fleming, CFC associate director for campaigns, presented the CFC Merit Award in recognition of NIH's generous giving—\$664,000, or 102 percent of its goal of \$652,000.

NIH Retrospectives



WINTER 1950

A new Chemical Pharmacology Section has been established by the National Heart Institute, with Dr. Bernard B. Brodie, Associate Professor of Biochemistry at New York University College of Medicine, selected as chief... Mildred Struve, director of nursing services at the Marine Hospital in Seattle, has been appointed first director of Nursing at the Clinical Center. The construction of the Clinical Center was begun on Jan. 1, 1950... Somewhat recovered from their initial venture, "Life at NIH", the Hamsters are coming out of hibernation to discuss their next production for Fall 1950... Dr. Maurice I. Smith, chief pharmacologist, has retired after 30 years with NIH and the old Hygienic Laboratory. He had a temporary "summer position" with the Hygienic Laboratory in 1918, and two years later he left the University of Nebraska to accept a permanent position with the Laboratory... The National Cancer Institute recently awarded grants of \$863,496 to aid laboratory and clinical cancer studies in non-federal institutions.



WINTER 1960

The first eight-carbon sugar to be found in nature has been discovered by scientists at NIAMD. The rare sugar was isolated by Drs. A. J. Charlson and Nelson K. Richtmyer of NIAMD's Laboratory of Chemistry. It has been

found in both the avocado and the sedum plants... Research survey missions took NIH scientists to opposite ends of the earth in recent weeks. Drs. G. Donald Whedon, assistant director, and Heinz Specht, chief of the Laboratory of Physical Biology, both of NIAMD, visited Anchorage and Fairbanks, Alaska, to study the physiological effects of cold. Drs. Elsworth R. Buskirk, physiologist in the Metabolic Diseases Branch, NIAMD, and Dorland J. Davis, Associate Director in Charge of Research, NIAID, were part of a group that visited Antarctica to examine the problems of carrying on research in extremely cold weather areas... Dr. Harry Eagle, chief of the Laboratory of Cell Biology, NIAID, will be the first NIH scientist to present a National Institute of Health Lecture. His topic is "Biosynthesis in Human Cell Cultures"... NIH Director Dr. James A. Shannon, Institute Directors and other staff began testimony before the House of Representatives Subcommittee of the Committee on Appropriations in support of the NIH budget request of \$400 million for fiscal year 1961.



WINTER 1970

Dr. Mortimer B. Lipsett, NCI, will join NICHD to direct and coordinate intramural research on reproductive biology and conception... NIH was awarded the Oliver Owen Kuhn Cup for 1969 by the Bethesda-Chevy Chase Chamber of Commerce for the design of its new research complex, Buildings 35-36-37... Dr. Robert J. Huebner, chief of NCI's Viral Carcinogenesis Branch, was one of six scientists named by President Nixon to receive a 1969 National Medal of Science... Dr. Maitland Baldwin, 51, Clinical Director

and chief of the Surgical Neurology Branch, NIDS, died suddenly of a stroke Feb. 9, 1970. He was one of the founders of NIH's neurosurgery research program, and he also took an active part in creating the Clinical Center Surgical Wing... Dr. Margaret Pittman, chief, Laboratory of Bacterial Products, Division of Biologics Standards, is one of six women in government service who will receive the 1970 Federal Woman's Award for her work in pertussis vaccine standardization and her studies on pertussis and other diseases including cholera, tetanus and typhoid... The Administration's fiscal 1971 budget request for NIH proposes more than \$1.5 billion—an increase of \$103.5 million or about 7 percent over the fiscal 1970 budget request.

The NIH Record

U.S. Department
of Health,
Education, and
Welfare

September 19
1970
Vol. XXIX
No. 10

National
Institute of
Health

WINTER 1980

Revised guidelines for research involving recombinant DNA molecules were published by NIH Director Dr. Donald S. Fredrickson in the Jan. 29 issue of the *Federal Register*... Dr. Thomas A. Waldmann, chief of the National Cancer Institute Metabolism Branch, will give the G. Burroughs Mider Lecture on control of the immune response... Trappist Monk volunteers assist research on the inoculation of humans with the hepatitis B virus vaccine... The U. S. Supreme Court has ruled that grantee research data are not NIH records and are therefore not subject to the Freedom of Information Act. The ruling's effect is that NIH need not insist that grantees hand over data for release to requestors... The President's fiscal year 1981 budget request for NIH is \$3,581.5 million, a net increase of \$138.9 million over the 1980 budget of \$3,442.6 million.

Attention

NIHAA wants to hear from its members. Please type or print legibly your note for a future issue and mail it to:

Harriet R. Greenwald, Editor
NIHAA Update
 9101 Old Georgetown Rd.
 Bethesda, MD 20814

Name

Home address Home phone

News. Include dates/position at NIH.

NIHAA Committee Choice

Future Plans for NIHAA

Future plans for the NIH Alumni Association include sending each member a directory, establishing local chapters across the United States, developing additional international chapters in conjunction with the Fogarty International Center, and organizing our member-volunteers to work with one or more of the 13 NIHAA committees.

The committees are: Washington Chapter Program Planning, Newsletter Advisory Board, Membership (USA), Membership (International), Fund Raising, Special Events, Alumni House,

Speakers Bureau, Reunions, Nominating, Publicity, Volunteer Coordinating and Alumni Day. We welcome your participation. Please let Harriet R. Greenwald know your particular interests and she will send more information.

Discussions are also underway for holding an Alumni Day at NIH in September 1990 the day following NIH Research Day. More details will be forthcoming in the next *Update*. The Washington chapter of NIHAA is also scheduling a series of events for Spring 1990 including a concert and buffet, and a book signing and luncheon. Look in

the Calendar section on p. 23 for further details. Local members will receive specific invitations to these activities. A reception at the Embassy of Japan is being planned for October 1990.

The response to *Update* has been enthusiastic. We hope to expand the newsletter into a quarterly, but we need more information from our members, especially news and views from you. We invite you to send in the clip-out form above. Please include comments and suggestions both for the association and for the newsletter.



NIHAA UPDATE

If You Are Not Yet A Member Of The NIHAA (Clip and mail)

NIHAA Office
91201 Old Georgetown Rd.
Bethesda, MD 20814

If you joined NIHAA before
April 1989, and have not
returned your dues renewal
notice, please do so as soon as
possible.

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

(Title) (Organization)
from _____ to _____ My membership dues of \$ _____
(Years)

are enclosed payable to FAES/NIHAA. Dues are tax deductible.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment if applicable: _____

Mailing Address: _____

City, State, and Zip Code: _____ Telephone: _____

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are
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NIH Alumni are people who have worked or studied at
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NIHAA Update
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Surgeon General Novello Wants To Be America's Doctor

By Rich McManus

The day Dr. Antonia Coello Novello resigned her post as NICHD deputy director to become the 14th surgeon general of the United States, her voice got a million times louder.

Not that anything in her volume or tone changed; she is still a rapid and impassioned speaker, as though the cadences of her native Puerto Rico propel her English into characteristically exuberant phrases.

For example, "I am 159,000 percent Puerto Rican!" was her unminced reply to a reporter who asked, during a recent coffee klatch with the press, what effect her heritage will have on her new position.

Nowadays, and especially in the wake of predecessor C. Everett Koop, who was outspoken and undaunted, anything Novello says is potential news. When she was sworn in by President Bush on Mar. 9, her gender and ethnic

(See *Novello* p. 24)



Dr. Antonia C. Novello, former NICHD deputy director, is the nation's newest surgeon general.

From Researcher to Director and Back

Donald Fredrickson Returns to NIH

By Anne Barber

Starting out as a clinical associate in 1953 and later becoming the NIH director, Dr. Donald S. Fredrickson is back working in the same laboratory where he began his 28-year career at NIH.

"Coming back, after being at NIH all these years, is a treat and a privilege for me. I am pleased to be connected to my old lab. It helps to keep me up-to-date with cholesterol research, which is where I started when I first came to NIH."

Fredrickson began his long medical career in the National Heart Institute's Laboratory of Cellular Physiology and Metabolism, where he later became clinical director and also served as head of the Molecular Diseases Branch. He later became director of NHI, and director of intramural research for the institute before becoming NIH director.

"I think I wore all the hats in the heart institute at one time or another during my career," he says.

His earliest research interests centered on the metabolism of sterols. He focused on the structure of plasma lipoproteins, their importance in the transport of fats and the genetic factors regulating their metabolism and concentration in blood. Today, Fredrickson is considered one of the world's authorities on how cholesterol and fats are handled by the body.

Along with returning to NHLBI as a researcher in his original field of study, Fredrickson is also a scholar at NLM these days. Both are volunteer jobs. He divides his time between NIH and a consulting practice where he works mainly with the European community and Africa as an expert looking at their medical research.

(See *Fredrickson* p. 22)



Dr. Donald S. Fredrickson in 1969.

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Science Research Updates

CHANGES IN DIET RESULT IN CONTROLLING ATHEROSCLEROSIS

NHLBI's Cholesterol Lowering Atherosclerosis Study (CLAS) indicates that modest changes in diet aimed at reducing intake of saturated fat can significantly retard the development of subsequent atherosclerosis. In 1987, CLAS scientists reported finding a significant benefit from the cholesterol-lowering medication tested in the study. A subsequent epidemiologic study examined the diets of the 82 men in the placebo group using 24-hour recall data. The 18 placebo recipients who developed new atherosclerotic lesions during the study, as detected by coronary angiography, consumed an average of 34.1 percent of their dietary energy in the form of fat, while the placebo recipients without new lesions consumed an average of 27.5 percent of their energy in the form of fat. The study authors conclude that relatively modest efforts at substituting low-fat for high-fat meats and dairy products in diet can help significantly in controlling the development of atherosclerosis.

NINDS TRIAL SHOWS TREATMENT PREVENTS STROKES IN THOSE WITH HEART CONDITION

An aspirin a day or treatment with the blood-thinning drug warfarin cuts stroke risk in people with a common heart ailment by 80 percent, according to preliminary results of a clinical trial funded by NINDS.

Without treatment, the more than 1 million Americans with atrial fibrillation, an irregular beating of the heart, have five to six times the normal risk of stroke. The study followed 1,244 patients with atrial fibrillation for 14 months. Strokes occurred in 1 in 12 participants in the placebo group,

but in only 1 in 50 of the group receiving aspirin or warfarin. The study results prompted scientists to halt the no-treatment arm of the nationwide trial and place all participants on therapy with either aspirin or warfarin. The study will continue another 2 years to determine which of these drugs is more effective in preventing stroke in this population.

Data from the study indicate that people over 75 do not seem to benefit from aspirin. According to study scientists, this may be due to changes in how the body digests or responds to the drug as we age.

MRFIT STUDY SHOWS BENEFIT OF COUNSELING AND TREATMENT

Ten years after the beginning of NHLBI's Multiple Risk Factor Intervention Trial (MRFIT), the study has shown a significant reduction in mortality in those men who received counseling and treatment to reduce risk factors for heart disease, when compared with men who received no comparable therapy.

MRFIT studied 12,866 men who were at high risk for cardiac disease based on blood pressure, serum cholesterol, and smoking history. About half of the men were assigned to a standard care group while the other half received counseling to reduce cholesterol and to stop smoking and drug treatment to control hypertension. When the intervention part of the study ended in 1982, no significant difference in mortality between the two groups was as yet evident. The study group now reports 24 percent fewer heart attack deaths in the intervention group than in the standard care group, and the scientists predict that over time, this difference in mortality will grow.

The results of MRFIT provide clear evidence of the benefits to health of

taking commonly recommended measures to reduce heart disease risk factors.

NINDS REVEALS TREATMENT RESULTS FOR ACUTE SPINAL CORD INJURY

Results of an NINDS-sponsored study of patients with spinal cord injury show that treatment within 8 hours of injury with very high intravenous doses of the steroid methylprednisolone can significantly improve long-term motor and sensory function and in some cases reduce the chances of paralysis. The beneficial effects of methylprednisolone continue for at least 6 months and appear to extend to injuries of all degrees of severity.

Results of the National Acute Spinal Cord Injury Study (NASCIS) could have such profound benefit for the 10,000 persons each year who suffer spinal cord injury that NINDS announced the results of the study weeks before its scheduled May publication in the *New England Journal of Medicine*. The study compared 162 patients treated with methylprednisolone, a corticosteroid, with 154 patients receiving a placebo. Patients receiving methylprednisolone showed significant improvement in both muscle function and pin and touch sensation at 6 weeks and 6 months after injury when compared with patients receiving alternative treatment or a placebo.

Methylprednisolone is readily available in hospital emergency rooms. Earlier research has demonstrated that lower doses of the drug are not effective in improving the outcome of injury.

This material was compiled by Charlotte Armstrong, Office of Communications, OD.

Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit material.

Editor's Note

The NIHAA Update, is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

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A Message From the New NIHAA President, Gordon D. Wallace

I welcome the opportunity to serve as the first NIHAA president, and appreciate the confidence in me expressed by the board of directors. My tenure begins at a good time in the development of NIHAA. Under the able and dedicated leadership of Abner Notkins, aided by an active board and with hard-working committees made up of dedicated and talented members, and an executive officer who among others things is responsible for a newsletter of which we are all proud, there is a solid base from which to build.

There are three immediate priorities: 1) expanding our membership, 2) fund raising, and 3) addressing some of the important issues facing NIH such as funding, research priorities, ethical use of animals, fetal tissue for research, technology transfer and conflict of interest, to mention a few. Locating NIH alumni has proven difficult and will require continuing and extensive effort. In regard to the issues, we have established an "Issues and Policy Committee," that will articulate the NIHAA position in ways to influence decision-making processes. Dr. John Sherman, the NIHAA vice president,

has agreed to chair the committee. This committee will interact closely with the planned NIHAA National Advisory Board, to be chaired by Abner Notkins. Both the committee and the board will be composed of individuals whose opinions will be respected and will attract attention.

I must admit that I have had a love affair with NIH for a long time and take considerable pride in my lengthy association with such an outstanding institution. Also, I have greatly appreciated the unique opportunities provided me to do research and science administration. Therefore I look forward to the opportunity to serve the NIHAA, an organization that can play an important supporting role to NIH, as well as provide a forum for science and professional camaraderie.

Dr. Gordon D. Wallace joined NIH in 1960 and retired from the U.S. Public Health Service in 1986. During this period he did research on infectious diseases and served in various administrative positions. His last position was associate director of the intramural research program at NIAID. Since 1986 he has been involved with a consulting business focusing on technology transfer and private sector/federal laboratory relationships. A year ago he cofounded Bio-Brite, Inc., to develop and market a portable light dosage system for the treatment of Seasonal Affective Disorder and related conditions. Bio-Brite is working with NIMH in this area.



Dr. Gordon D. Wallace

NIHAA Forum

A Future for Intramural Research?

By Dr. Robert G. Martin

What will the incentive be 25 years from now for any self-respecting scientist to work at the National Institutes of Health?

Those of us who chose to remain at the NIH over the years were an odd lot. And we were proud of it. We made the deliberate and difficult decision to stay despite lower pay, crowded working conditions and no undergraduate students. We did so for two reasons.

The first was an unwritten understanding that we could remain hands-on scientists, working in the lab and not having to spend large blocks of time writing grants. We didn't object to outside review; in fact, we welcomed it. But the review took the form of an annual hour lecture with questions, and entailed the presentation of our accomplishments for the past year and plans for the next. That, a bibliography and a few pages of summary were all the paperwork required.

Fortunately, the review process *per se* has changed very little. But the handwriting is on the wall. Research support for NIH'ers is becoming more burdensome. In the past, all support had been internal to each institute and lab. Now, "additional" support is available through special-projects funding. I appreciate the enormous impact of the AIDS epidemic and the usefulness of enlisting scientists from many different disciplines. But the effect of establishing internal boards of review at the NIH to dispense these special funds is bound to lead to more formalized review committees in other areas—and paperwork.

Another "additional" support gimmick is that NIH'ers now can compete with extramural scientists

for funding on the human genome project. The price is a formal research grant proposal and more paperwork.

Furthermore, at the suggestion of the administration, we at the NIH are now not only allowed to seek "additional" support for our research from industry, but also are eagerly encouraged to do so. Is there any doubt that this will mean that those labs capable of bringing in funds will grow and the others will shrink? Is this healthy? Would research of the sort that led to the development of recombinant DNA technology have been supported by those seeking a product or a profit? (And if NIH scientists are forced out of basic research, do those of you working in universities on NIH grants think you will not soon face a similar fate? But that's a separate problem.)

I worry that intramural scientists will not be able to escape an onslaught of unnecessary paperwork. If they are forced to seek research support from special intramural funds, extramural grants, and industry, can the rumors one now hears that all intramural support will soon mimic the extramural grant process be far off base?

The second understanding that led many of us to remain here was that the NIH would support our efforts and smooth the way for us to attack both fundamental and applied research problems in a congenial and stimulating environment. The intangible changes in atmosphere and administrative support are hard to document and seem even petty to discuss. But let me give a few examples.

The procurement office used to exist to help researchers obtain the materials they needed. Instead, we now have some procurement officers who feel it their primary duty to save the government money, even if that means delays, inferior equipment, unreliable suppliers and supplies. (Those expenses are hidden). We now even have

seminars for the scientists on how to explain to procurement what is needed and why, so as to assist them to facilitate our purchases! It is not uncommon for orders to remain untouched on the desk of some procurement officer for 40 days, and there is at least one documented case of no action being taken for 79 days. Emergency orders can take 28 days.

Labs are growing in size, as indeed they must with new technology, but at the same time funds are getting tighter. The currently rudderless NIH allows the expansion to proceed haphazardly and with little control when the lab chief can pull in outside funds and political pressure. An extreme example of this now occupies the entire top floor of Building 37.

We are about to be issued guidelines on the proper conduct of intramural research and the new Office of Scientific Integrity funds the study of "fraud" and "misconduct" rather than excellence and insight.

Minor annoyances abound, from the effect the new congressional law on ethical behavior will have—no honoraria—to administrative red tape regarding travel, reimbursement, cooperative research and that eternal problem, parking.

In short, it is considerably harder to do the simplest experiments and a chilling change in atmosphere from that of a blooming scientific wonderland to a bureaucratic wasteland seems to be creeping in upon us.

Are the erosions of the two understandings that led many of us to stay irreversible? God, I hope not! Am I optimistic? Not really. In fact, I now routinely advise postdocs to get out. Still, there is one thing that may keep top notch scientists at the NIH—outside grant funding at the 15% level.

Dr. Martin is chief of the microbial genetics section in the Laboratory of Molecular Biology, NIDDK.

NIHAA Forum**Protecting Animal Research: Responsibilities Of Biomedical Science Administrators***By Dr. Frederick K. Goodwin*

During the past decade, the NIH and ADAMHA, along with the larger health science and health care communities, were taken by surprise as the use of animals in biomedical research has been challenged with mounting vehemence and impact. New regulatory and security requirements are diverting hundreds of millions of dollars from research, and a growing climate of fear is evident as some scientists turn away from important and promising areas of animal research. For example, at a time when the need for animal models of drug addiction has never been greater (to develop medications to control drug craving), it is alarming that the number of published drug abuse studies involving primates is declining precipitously.

Antivivisectionist sentiment in this country has waxed and waned over the last century, but always remained a minority position within the mainstream animal welfare community. Now, under the banner of animal rights, antivivisectionists have, in less than a decade, co-opted and virtually taken over much of the animal welfare movement.

How has this happened? Contemporary cultural conditions, such as the appalling scientific illiteracy of our young people, have contributed. In addition, we must recognize the unintended complicity of the scientific and medical communities; by our silence or by the apologetic tone of our initial responses, we assisted the ascendancy of a movement that aims to prohibit all use of animals for human needs, with biomedical research a principal target.

To the extent that animal rights proponents succeed, they will irreparably damage medical practice. Although animal research accounts for less than one-fourth of all biomedical research, animal models are the essential link between *in vitro* studies (the test tube and petri dish) and the needs of patients.

The linkages between animal research and new treatments and preventions for diseases are unambiguous, as was documented by Julius Comroe and Robert Dripps in a thorough and persuasive review published by the NIH. In this project, clinicians in cardiovascular-pulmonary medicine were polled as to what they viewed as the medical advances that were most helpful to their patients. Responses included open heart surgery, drug treatment of hypertension, cardiac

resuscitation and defibrillation techniques, oral diuretics, chemotherapy and antibiotics, early diagnostic methods, prevention of poliomyelitis, and others.

All of the advances were shown by the authors to have depended on animal research at critical stages of their development. Four of the top ten ranked advances, moreover, were shown to have originated in unrelated fields, a pattern that is true of my field of psychopharmacology and virtually any other medical specialty. Both the typical lag-time and the unforeseen applicability of basic knowledge to problems of disease effectively rebut the frequent demand of animal activists that every research project must be justifiable in terms of a predictable health application. By this yardstick, most contemporary medical advances never would have happened.

In the face of such evidence, how can animal activists persist in their efforts?

To understand this, we must realize that the struggle is fundamentally philosophical and moral. Stripping away the facile, pathetically misinformed, and/or dishonest arguments against animal research reveals a philosophy based on the moral equivalence of humans and other sentient beings. To animal rights adherents, any use of animals by humans is "speciesism," morally akin to racism and sexism. To the accusation that we who support animal research are "speciesists," I say, "Guilty as charged."

How have we—scientists and science administrators—unwittingly played into the hands of the animal activists? Initially, we underestimated the movement's impact. We were unable or unwilling to believe that seemingly intelligent people could challenge a fundamental tenet of an enterprise that represents one of the more noble

**Dr. Frederick K. Goodwin***(See Animal Research p. 6)*

Animal Research (cont. from p. 5) expressions of a developed society: improving the health of its people. It was as though we decided that this aberration would soon go away, and that the less attention we drew to the use of animals in research, the better.

When we finally began to respond, we sought a "middle ground" where we could engage "moderates" who presumably would temper extremists in the movement. As we accepted the targeting of substantial resources to the search for alternatives, the core of our response became the search for the "3-Rs"—i.e., a reduction in the number of animals used, refinement of procedures, and replacement with alternatives—all principles of good science that, in fact, predated the contemporary debate over animal rights.

As the public viewed a response dominated by the 3-Rs and by our precise and often overly academic reactions to anti-research charges of the opposition, we seemed to many apologetic about animal research. Tactically, the animal rights movement pursues its radical agenda with political sophistication, passion, and a very effective appeal to nearly universal sentiments about animals. It is clear that we must respond on all those levels in addition to the more purely intellectual level. In the past, the more we searched for an accommodating "middle ground," the more determined and extreme the opposition became. A recent in-depth profile of People for the Ethical Treatment of Animals (PETA), published in Montgomery county's *Journal*, noted that the movement's leaders are "not looking for acceptance, but for acquiescence."

The "call to arms" finally has been sounded, however, and the response at all levels of HHS is encouraging. Secretary Louis Sullivan, Undersecretary Constance Horner, and Assistant

"It is imperative that all scientists... work to expose the basic philosophy of animal rights, inviting public understanding of an anti-intellectual movement whose premise is incompatible with the humanistic values of the health professional."

—Dr. Frederick Goodwin

Secretary of Health Jim Mason have been forthright and unequivocal in their support of the role of animal studies in biomedical and behavioral research. Their stance has been invaluable in bolstering the overall scientific community's belated efforts to form a consensus on specific actions



Counterdemonstrators mingled with "animal rights" activists at a protest against the use of animals in addiction research at NIH on Apr. 24.

to stem the drift of misinformed public and legislative opinion toward the well-camouflaged objectives of the animal activists.

First, it is imperative that all scientists and science administrators work to expose the basic philosophy of animal rights, inviting public understanding of an anti-intellectual movement whose premise is incompatible with the humanistic values of the health professional. Exposition of the animal rights philosophy can and should be made in community forums, in contacts with legislators, and in routine physician/patient interactions. Alumni of the NIH possess the knowledge and first-hand experience—and, thus, the credibility—to contribute immensely to this educational task.

It is important to distinguish clearly between the animal welfare and animal rights movements. Animal welfare is a traditional, well-respected part of mainstream advocacy in this country and in most of the western world. Based on the philosophical premise of responsible stewardship of animals, animal welfare encompasses humane care. Traditional animal welfare advocates operate on the premise that humans are responsible for animals, not that animals have intrinsic rights. This latter notion conflicts not only with our cultural and religious values concerning the sanctity of human life and our special dedication to human rights, but also with the foundation of our entire legal system.

While focusing on the fundamentally flawed moral and ethical logic of the animal rights argument, we also must anticipate the activists' diversionary arguments opposing animal research, and possess facts to counter specious objections. A sampling of frequently used allegations and factual responses includes:

Animal research is inherently cruel. In fact, use of anesthesia is standard

in almost all invasive research, and is especially important in behavioral research, where undue pain and distress can severely distort the validity of findings. In the few studies where pain *per se* is being studied and anesthesia is not used, "thresholds" for pain are the most informative research measure; sustained administration of genuinely painful stimuli would be counterproductive to the overwhelming majority of research goals.

Animal research is wasteful and duplicative. As members of the scientific community know all too well, competition for federal research funding is intense. Given limited research resources, scientists who peer review each others' applications obviously are not going to approve frank duplication.

Animal research diverts funds from treatment. This argument, unfortunately seductive to a few naive treatment

professionals, represents an effort by the animal rights movement to balkanize the research and treatment communities, by pitting those who generate new knowledge against those who apply the information in clinical settings. The data, however, do not come close to supporting the claim. For every \$100 the federal government spends on health care generally, less than 40 cents supports animal research. For mental and addictive disorders exclusively, the figure is 20 cents per \$100 in treatment costs!

Animal research is unnecessary to medical progress. We tend to underestimate the extent to which this variation on the "big lie" is fostered by the public's lack of understanding about the process, as opposed to the yield, of biomedical science. Here, the animal rights movement is successfully exploiting a potentially disastrous

failure of contemporary American society—our failure to educate our young people about science. The federal biomedical science establishment must devote resources and energy to carefully planned and long-term science education programs. We can be encouraged by Dr. Mason's recognition of this issue and by the quality and ambitious nature of a biomedical science education plan developed this year by an NIH and ADAMHA work group.

Modern alternatives can replace animals in research. This argument holds that alternatives to the use of animals in research exist. Regardless of how little people may know about science, most are familiar with such buzzwords of the argument as "computer modeling" and "tissue culture," and most have passing familiarity with such technological innovations as scanning devices. Animal rights advocates deliberately obscure the fact that computer modeling of living systems requires actual data from living systems, or that tissue culture cannot substitute for the complexity of an animal. Those who claim that new technologies, such as PET scanners, offer a substitute to the use of animals conveniently overlook the many years of animal research that made the PET scanner and other technologies available in the first place.

As suggested here, rebuttals can be brief and straightforward. A compilation of pertinent facts is available from ADAMHA, both in hard copy and slides. Most important is that we be able to point knowledgeably to the contributions of animal research to the treatment of ailments with which we are familiar.

Dr. Goodwin is administrator of the Alcohol, Drug Abuse, and Mental Health Administration.



A nurse belonging to a group called "Nurses Against Animal Experiments" speaks out at an "animal rights" protest near Bldg. 36 on Apr. 24. Twenty-seven protestors were arrested when the rally turned violent. (Photos: John Crawford)

'Process Is Under Way'

Search for NIH Director: Round Two

The second attempt to recruit a new NIH director is now under way, reported Dr. James O. Mason, HHS assistant secretary for health, at a meeting of the NIH Alumni Association on June 18 in the Mary Woodard Lasker Center (the Cloister). Mason heads the search committee that was unsuccessful in its first attempt to find a replacement for Dr. James B. Wyngaarden, who resigned last summer.

Mason was also chair of a committee charged with examining the enhancements necessary to make the NIH director's job more enticing to qualified candidates. While some of its recommendations were adopted (easier access to the HHS secretary, power to disburse discretionary funds and authority to transfer funds among ICDs), others require legislation before they can be implemented.

What hampers the search most, Mason said, is that the best candidates identified so far don't want the job.

"Our first disappointment was when Tony Fauci turned the president and the secretary down," Mason said.

The second disappointment was when a low-level White House aide phoned a candidate, Dr. William H. Danforth, chancellor of Washington University in St. Louis, to inquire about his position on abortion.

The so-called "litmus test" issue was "a great embarrassment to Dr. Sullivan and myself," said Mason, who assured the audience that neither the president nor his top advisers authorized such an inquiry. According to Mason, his only instruction from Bush and White House chief of staff John Sununu is to find "the best qualified candidate to lead the agency.

"The problem isn't finding someone willing to be NIH director," Mason said. "The candidates are out there. They're all over the place. But I don't want them and you don't want them either."

Mason said the new NIH director must possess charisma and a sense of patriotic duty in addition to being a recognized leader in biomedical research. The director must also be able to work effectively with Congress and the public.

Asked how the alumni could help him in his search, Mason replied, "If you could send me another Jim Shannon (NIH director from 1955 to 1968), we'd get this whole thing straightened out."

Mason said that the enhancements to the director's job called for by his committee "won't fix all of the problems the director will face, and they won't fix them overnight."

He also expressed surprise that it has been far easier to recruit a new FDA commissioner than it has been to find an NIH director, despite challenges he said were greater at FDA than at NIH. The reason? "The cultures are different at the two agencies. NIH is far more like academia."

Taking questions from the audience, Mason was asked by former NIH director Dr. Donald Fredrickson, who is a member of the enhancement committee, whether anyone in the department was drafting legislation needed to implement some of the authorities needed to strengthen the director's position.

"No Don, not to my knowledge," replied Mason.

More than 6,000 letters were sent to academic institutions and private

agencies and businesses in the first round of recruiting efforts by the search committee, Mason reported. These letters solicited names of likely candidates and yielded a roster of 80 people. The committee whittled that number down to a "short list" of five people, none of whom, presumably, wanted the job.

A second short list of five names was developed by a second gathering of the search committee, which was guided in its efforts by recommendations made by the enhancement committee. The process of contacting those individuals is "now under way," Mason said.



Dr. James O. Mason, HHS assistant secretary for health at the June 18 meeting of the NIH Alumni Association. The event was held at the Mary Woodard Lasker Center (the Cloister) and attended by over 100 NIHAA members from the Washington chapter.

Meet the Newest Institute Director: Dr. James B. Snow, Jr.

Dr. James B. Snow, Jr. became the first director of the National Institute on Deafness and Other Communication Disorders. He was sworn in on Feb. 12, 1990.

NIDCD was established in October 1988 by Public Law 100-553 to increase and expand research and research training in hearing and other communication processes including diseases affecting hearing, balance, smell, taste, voice, speech and language.

As director, Snow will be responsible for planning, implementation and evaluation of institute programs to conduct and support biomedical research, research training and public health information in human communication.

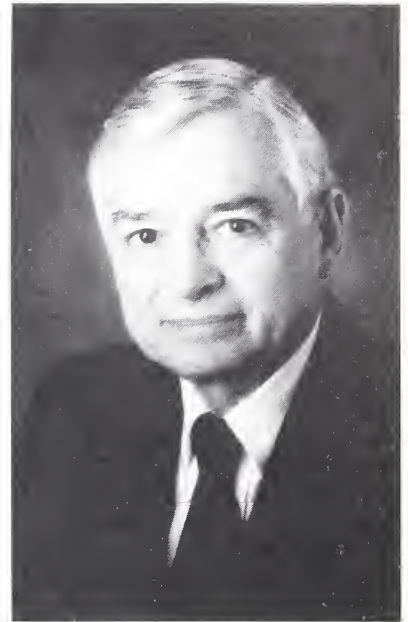
Current initiatives of the institute include the development of a strong science base through investigator-initiated research, training the next generation of basic and clinical scientists, the development of national multipurpose research and training centers, expanding the intramural research program, the establishment of a national information clearinghouse on deafness and communication disorders, and a major education and prevention campaign on communication disorders.

Snow received his M.D. cum laude from Harvard Medical School in 1956. He served his internship in surgery at Johns Hopkins Hospital in Baltimore and his residency and research training in otolaryngology at the Massachusetts Eye and Ear Infirmary in Boston. Beginning in 1960, he served as a captain in the U.S. Army Medical Corps for two years. He returned to his home state of Oklahoma and began work at the University of Oklahoma Medical Center where he

rose to professor and head of the department of otorhinolaryngology. In 1972, Snow moved to Philadelphia to become professor and chairman of the department of otorhinolaryngology and human communication at the University of Pennsylvania School of Medicine. Snow was the medical director of the Smell and Taste Center and the Speech and Hearing Center of the Hospital of the University of Pennsylvania and served as the principal investigator of the University of Pennsylvania Smell and Taste Clinical Research Center. He held hospital appointments at the Children's Hospital of Philadelphia, the Veterans Administration Medical Center, the Graduate Hospital, the Pennsylvania Hospital and the Presbyterian-University of Pennsylvania Medical Center.

During the past 30 years, Snow has specialized in the communication sciences. He has published more than 175 articles, books and abstracts about his specialty areas and research findings, which include studies on radiation therapy and surgery of cancer of the head and neck, blood flow in the inner ear, and the chemical senses.

Snow was a 1970 recipient of the Regents' Award for superior teaching at the University of Oklahoma, held a consulting professorship at the Shanghai Second University of Medical Sciences in China in 1985, was elected honorary fellow of the Japan Broncho-Esophagological Society and received the Golden Award of the International Federation of Oto-Rhino-Laryngology Societies in 1989. As Chairman of the Education Committee of the International Federation of Oto-Rhino-Laryngological Societies, he fostered the establishment of national systems



Dr. James B. Snow, Jr.

of accreditation of training and specialist certification in otorhinolaryngology on a world-wide basis. Snow serves on the editorial board of *Chemical Senses* and the *American Journal of Otolaryngology* and has served as editor of the transactions of the American Broncho-Esophagological Association and the transactions of the American Laryngological Association.

Snow is a member of numerous professional societies including the American Academy of Otolaryngology-Head and Neck Surgery, the American Neurotology Society, the American Otological Society, the Association for Chemoreception Sciences, and the Association for Research in Otolaryngology. His activities in organized medicine have included service on the Council on Scientific Affairs of the American Medical Association, as a Regent of the American College of Surgeons and a Director of the

(See Snow p. 21)

News From and About NIHAA Members

Calvin Baldwin, former associate director for administration, who was at NIH from 1953 to 1986, writes: "This winter Betty and I enjoyed our first Elderhostel trip—three weeks in Australia and one week in New Zealand, followed by two weeks on our own touring the South Island of New Zealand. If you don't mind living in dormitories and eating in university cafeterias, we recommend Elderhostels. I have been retired from NIH for 4 years and thoroughly enjoy doing as I please. Betty has recently retired from the Montgomery County Headstart Program and was recently honored as the recipient of the Henry L. Dixon Memorial Award for 'outstanding service to low-income communities.' "

Dr. Merton Bernfield, an NIH research associate, 1963-1965, reports that he "left Stanford Medical School after 22 years to become the first Clement A. Smith Professor of Pediatrics and Chief, Joint Program in Neonatology as well as Professor of Anatomy and Cell Biology, Harvard Medical School."

Dr. Neil R. Blacklow, who worked in NIAID's Laboratory of Infectious Diseases from 1965 to 1968 and also 1969 to 1971, has been appointed "Chairman of the Department of Medicine and Richard M. Haidack Distinguished Professor in Medicine at the University of Massachusetts Medical School."

Dr. Paul P. Carbone, who was at NCI from 1960 to 1976 in the Division of Cancer Treatment, Medicine Branch, writes that he moved to Madison, Wis., "to become Chairman of the Department of Human Oncology and Direc-



Gathering at a recent mixer sponsored by the NIH Alumni Association at the Sheraton Washington Hotel were (from l) Dr. Emil Freireich, M.D. Anderson Cancer Center, and special advisor to director, NCI, 1990; Dr. Peter Greenwald, director of NCI's Division of Cancer Prevention and Control, and Dr. Shalom Z. Hirschman, Mt. Sinai Medical Center.

tor of the University of Wisconsin Clinical Cancer Center, one of 22 comprehensive centers. I have also been Chairman of the Eastern Cooperative Oncology Group since 1970, an office that I will be relinquishing in 1991. . . In the past year I have been invited to be a visiting professor at the Royal Adelaide Hospital in Australia and at the University of Puerto Rico. I received the Hilddale Award for 1989 for the outstanding faculty in the Biological Sciences Division and the Gottlieb Award from M.D. Anderson Hospital. I am still active in seeing patients, teaching medical students and have more than \$4.5 million in grants to run the UWCCC, ECOG, and my own research in experimental cytotoxic chemotherapy and chemopreventive agents. My son is now a clinical associate at the NCI in the Naval Medical Branch working on the molecular biology of lung cancer."

Dr. William O. Engler, a staff periodontist at NIDR from 1964 to 1966, retired in 1988 from the Medical University of South Carolina, College of Dental Medicine and is now professor emeritus there.

Dr. Richard J. Falk, NICHD research associate, 1968-70, is head of the reproductive endocrinology/infertility department, Columbia Hospital for Women, Washington, D.C., and clinical professor of obstetrics and gynecology at Georgetown University.

Dr. Gerald D. Fischbach, who was at NIH from 1966 to 1973, writes: "I will move to Harvard Medical School this spring to chair the Department of Neurobiology and to help direct the Neuroscience Center at Mass. General Hospital."

Dr. Roy G. Fitzgerald, clinical associate in the Affective Disease Unit of the Laboratory of Clinical Science, NIMH, 1968-70, is "currently Associate Clinical Professor of Psychiatry at Thomas Jefferson University and conducts a practice in psychiatry."

Dr. Edgar Haber, an NIH Fellow from 1958 to 1962, received a 1989 CIBA Award for Hypertension Research from the Council for High Blood Pressure Research of the American Heart Association.

Dr. John W. Hiemenz, a clinical associate in the Division of Cancer Treatment, NCI, from 1980 until 1983, reports that "after six years of practice of medical oncology and infectious disease in my hometown of Daytona Beach, Fla., I have joined the staff in the Division of Medical Oncology, Department of Medicine, College of Medicine at the University of Florida. Based on the research experience obtained at NCI under Dr. Philip Pizzo, and experience in patient care, my research and teaching responsibilities will encompass supportive care of cancer patients undergoing intensive cancer therapy, particularly bone marrow transplantation."

Dr. Alfred S. Ketcham, who was at NCI from 1957 to 1974, lastly as clinical director, writes that at present he is "chief of oncology and professor of surgery and the Sylvester Professor of Oncology at the University of Miami School of Medicine. He is also president of The Society of Pelvic Surgeons and president-elect of The Society of Surgical Oncology. He is the recent recipient of the American Radium Society's Jane Way Award and Lectureship."

Dr. Vernon Knight, who was clinical director at NIAID from 1959 to 1966, writes that in Jan. 1989, "I became

co-director of the Biotechnology Center at Baylor College of Medicine, after leaving the Chairmanship of Microbiology and Immunology, a position I held for 22½ years."

Dr. Richard A. McGee, an associate in clinical pathology from 1973 to 1975, has a full-time private practice in hematology and oncology. Part-time he is the medical director at Stevens Memorial Hospital and a clinical assistant professor of medicine at the University of Washington.

Dr. Benjamin Prescott, who was at NIAID from 1938 to 1979, writes that he is a 50-year member of the American Chemical Society and an honorary member of The American Society of Microbiology. He now lives in San Diego.

Dr. J. Palmer Saunders, who was director of the Division of Research Resources and Centers, NCI, from 1956 to 1974, writes: "I retired from NIH after 33 years of federal service to accept the position of Dean of the

University of Texas Graduate School of Biomedical Sciences at Galveston. I retired from that position effective August 31, 1987, and am now Professor in the Department of Pharmacology & Toxicology of the School of Medicine, University of Texas Medical Branch."

Dr. John F. Sherman, formerly deputy director of NIH, and since 1974 executive vice president of the Association of American Medical Colleges, received a lifetime achievement award from the National Association for Biomedical Research at its 10th anniversary celebration.

Dr. Maxine F. Singer, president of the Carnegie Institution of Washington and scientist emeritus at NCI where she maintains a laboratory, was elected to membership in the American Philosophical Society. About 20 new members are elected each year to the society, which is the nation's oldest learned body.

(See *Members* p. 27)



Among the attendees at the party hosted by the NIHAA on Sunday, May 6, at the Clinical Meetings at the Sheraton Washington Hotel were (from l), Dr. David Golde, UCLA, Dr. Harvey Gralnick, Clinical Pathology, CC, and Dr. Barry S. Coller of SUNY Stony Brook. The gathering was well attended with a mix of old and new NIH personnel and alumni. (Photos: B. Branson)

Eastern European Scientists Find NIH 'Doors' Open to Opportunity

By Carla Garnett

When the Berlin Wall came tumbling down last November, liberating thousands of Eastern European citizens to travel at will, at least one East German was already enjoying a rare freedom—the permission to do research in an American laboratory. NCI offered the lab and Fogarty Center, NIH's international arm, offered the means.

"I hope this year is a starting point," said Dr. Siegfried Janz, a visiting associate in NCI's Laboratory of Genetics and currently the only East German scientist studying at NIH for an extended time. "I hope this is a starting point for considerable increase in exchanges between the United States and East Germany."

Janz came to NIH in September 1988, more than a year and a half after he initiated the visit with East German officials.

"As a graduate student, I was already interested in the work of Dr. Michael Potter," said Janz, whose research here on plasmacytoma in the mouse was prompted by Potter's successful animal model of the disease. "I wrote my thesis about this tumor system. The Laboratory of Genetics at NIH is the key group in this field. They were and still are doing some very pioneering things in this area."

At home in Leipzig, East Germany, Janz works at the Institute of Clinical Immunology, a part of Karl Marx University-Leipzig. The institute, devoted exclusively to the research of plasmacytoma and the highly specialized diagnosis and treatment of myeloma patients, was formed in 1980.

"Half of the scientists do basic research on plasmacytoma," Janz



Dr. Siegfried Janz, who works in NCI's Laboratory of Genetics, is currently the only East German scientist studying at NIH for an extended time.

explains. "The other half does clinical work with patients."

In the early 1980s, after coming across various American manuscripts by Potter's group in *Current Contents*, the literature reference service issued by the Philadelphia-based Institute of Scientific Information, Janz decided to contact Potter and tell him about the research Janz's own group was doing.

"At that time it was inconceivable to apply for an exchange," he said, smiling. "But as a young man, you are attracted by any group that is at the top and does research in the area you are working on."

After receiving favorable and enthusiastic response from Potter, who had also agreed to sponsor Janz in the U.S., Janz applied for permission from his laboratory chief and eventually the East German government.

"My supervisor was very open-minded, very reform-minded even this early," Janz said. "This spirit that something must change was present much earlier, especially in Leipzig."

If the scientific community in Leipzig helped the pot in East Germany simmer, recent events, almost 10 years later, in that country have caused the pot to boil over.

"Everything used to get stuck in East Berlin," recounted Janz, whose first visit to the U.S. was held up about 18 months. "Definitely it is this type of regulation that has been removed now. A bunch of interested people are sitting in the starting blocks waiting with what could be many mutual benefits for our country and the U.S."

Dr. Philip Schambra, director of the Fogarty International Center (FIC), which facilitates exchanges such as Janz's, agrees.

"These are well-educated individuals who bring their sound basic education and brilliance to combine with the facilities, scientists and atmosphere at the NIH," he commented. "They bring their own backgrounds in science from their countries and they make a very significant contribution to NIH."

According to Schambra, who hopes to expand widely FIC's scientist exchange programs with Eastern Europe and the Soviet Union, about one-third of the researchers in most intramural NIH labs are foreign scientists—half or more in some campus labs. In order to expand the exchange programs, Congress would have to supplement FIC's budget allotment. Schambra may already have some top HHS officials supporting his efforts.

"(HHS secretary) Dr. Louis Sullivan and (assistant secretary for health) Dr. James Mason are very interested in ways of increasing contacts with these foreign scientists," said Schambra.

In 1988, 1,507 scientists from 71 countries participated in NIH's Visiting Program, the largest of NIH's intramural scientific exchange programs. The Visiting Program was established in 1950 to provide administrative and technical support to talented foreign and American scientists who wish to do research with senior NIH investigators. Fogarty's International Services and Communications Branch (ISCB) handles some aspect of virtually every foreign scientist visit to NIH.

Scientists may visit NIH in one of three capacities: visiting fellow, which carries a prerequisite of 1 to 3 years postdoctoral work; visiting associate, requiring 3 to 6 years postdoctoral work; or visiting scientist, requiring 6 or more years postdoctoral experience.

According to ISCB chief, Dr. Kenneth Collins, "Visiting fellows are considered junior scientists with less than 3 years of relevant postdoctoral research experience who come to NIH to obtain research training.

"Visiting associates and scientists work in a collaborative fashion as colleagues of their NIH sponsors. Participants in the NIH Visiting Program are funded by the sponsor's institute."

Guest researchers (who conduct independent research using NIH facilities) and special volunteers (who work collaboratively with NIH sponsors) constitute two other categories of scientists who do research at NIH. Guest researchers may be funded by a U.S. organization, foreign government or private organization; special volunteers are financially supported by their own countries. Almost 500 guest researchers from 47 countries and more than 150 special volunteers from 30 countries visited NIH in 1988.

Collins explained ISCB's role: "The ISCB provides complete management

support of these programs, including analysis of visa and immigration requirements as well as preparation of all documents needed to make an award, appointment or assignment.

"After arrival of the scientist," he continued, "ISCB handles activation of the foreign scientist into the appropriate program and in-depth orientation, stipend and salary matters, temporary and permanent departure from the U.S., conversion between programs or institutes, tax matters and a great number of other technical matters."

As successful and mutually beneficial as the Visiting Program has been, not until recent years have Eastern Bloc countries really taken advantage of NIH's offerings. While Japan and China combined account for almost 500 visiting program participants in 1988, such countries as Romania, the U.S.S.R. and East Germany have accounted for fewer than 15 combined.

The crumbling of Eastern Europe's political wall could help open doors to more and better research techniques for its biomedical science community.

Lack of accessibility to research methods and equipment in the home country brings a lot of foreign scientists to NIH. That reason brought Dr. Susan Lakatos to NIDDK from Hungary in November 1987.

Lakatos, whose 2½-year U.S. stay ends this summer, has been studying interaction between actin and globular proteins in the Laboratory of Biochemical Pharmacology.

According to Lakatos, well-equipped and adequately supplied laboratories are not to be taken for granted. For example, she says, time spent in Hungarian labs washing and rewashing pipettes and other instruments is time spent in NIH labs solely researching.

"This is a good example of the differences here," she said, gesturing toward a poster she prepared. "It took me less than one day to put together



NEI statistician Dr. Valeria Freidlin emigrated to the United States from the Soviet Union nearly 3 years ago and hopes to apply for American citizenship soon.

this poster. In Hungary, it would have taken all of one week, several days, to produce this same result.

"We don't have the computer software you have here," she continued, grinning, "but in my recent grant application (in Hungary) I have requested it. I will have to see if it is approved."

Because Lakatos has been in the U.S. during most of the recent political trials and triumphs of Eastern Europe, she was hesitant to speculate about how the changes will affect her country's biomedical research community. In 1988, 35 Hungarians researched at NIH. Will there be many more now?

"The country has really changed," she noted. "I don't know what I shall find when I go back. It's funny that I learn most about my own country from the *Washington Post*. It's a good newspaper."

Dr. Valeria Friedlin, a statistician who emigrated from the Soviet Union to the U.S. in 1987, is hopeful but less optimistic for the Soviet Union's political problems. According to her, Eastern Europe has a lot more going for it than the Union of Soviet Socialist Republics.

(See *Europe* p. 28)



Dr. Susan Lakatos, a visiting associate with NIDDK who has done research here since November 1987, returned to her native Hungary in June.

R&W Association Celebrates 45th Anniversary at NIH

By Rich McManus

No, it doesn't sponsor a rifle and pistol club anymore and its garden club has lain fallow for years, but you can get just about anything else you want at NIH's R&W Association.

Those two initials, which stand for Recreation and Welfare, cover a world of activities, interests, people, items and events that help bind the campus into something approaching a community. For 45 years now (though some sources indicate the true number is only 43), R&W has been at the heart of NIH life.

"The most fun part of R&W is that it crosses all kinds of work lines," says Dr. Helen Gift, president of R&W since last year. "There's an incredible mixture of people. You have firemen, plumbers, janitors, doctors and secretaries all getting together."



Randy Schools, general manager of R&W for the past 12 years, has turned the association into one of the nation's best employee services organizations. This year, he is also president of the National Employee Services and Recreation Association.

Two out of every three of the 13,000 NIH employees on the Bethesda campus are card-carrying members of R&W, which, in addition to sponsoring some 22 clubs (sailing and skiing are the biggest), runs five stores (four here and one at NIEHS in North Carolina) and does roughly \$1.2 million in business annually.

Years ago, one of the most anticipated social events of the year for NIH'ers was a play by the R&W-sponsored theater group, known then as "The Hamsters." Masur Auditorium would be packed for these satirical send-ups, written by employees, that were usually titled "Life at NIH."

Today, life at NIH is enriched at almost every turn by R&W. In the past year, the association has helped raise some \$225,000 to help endow the Children's Inn at NIH, has helped kick off both the CFC and Savings Bond drives, raised more than \$10,000 for the Patient Emergency Fund (which was established by R&W in June 1953 as the Patient Welfare Fund), helped to form the Wegener's Granulomatosis Foundation, supported Camp Fantastic and its parent organization, Special Love, Inc., encouraged health promotions including a Fitness Center that, in terms of membership, is at capacity, and helped launch the NIH Alumni Association.

And that is only a partial resume of accomplishments. A simpler way to appreciate the range of R&W services is to consider the following scenario—"Weekend a la R&W."

You get to the R&W Gift Shop in Bldg. 31 at opening time, 9 a.m., on Friday, to pick up the dark suit that you left there earlier in the week for dry cleaning. You are going to need it Sunday when you attend a performance of the Washington Ballet, tickets for which R&W sold at a discount. While waiting at the counter

you notice that Father's Day candy is on sale and buy a sample. Wandering over to the video rental display, you pick a film or two. On the way out the door, you pass up an opportunity to purchase a "Simpsons" t-shirt offered by an R&W vendor in the hallway. That afternoon, however, you visit the Maine Lobster Man for some fresh shrimp; he is sponsored by R&W 52 weeks of the year, paying the association \$60 each week, which is used to cover administrative fees for R&W. Saturday you take a bike trip sponsored by R&W, then wind down that evening with the videos. Following the ballet Sunday, where you saw all those lithe bodies leaping about, you resolved to join the next Quik-Fit aerobics session offered by R&W's Fitness Center. You also pledged to get your cholesterol level checked, courtesy of R&W and the Occupational Medical Services.

"We have a pretty well-rounded program," allows Randy Schools, general manager of R&W for the past 12 years and, by all accounts, the most ambitious and talented GM the association has ever had. "We're here to help people realize their potentials and gear them up for healthy lifestyles.

"If I could build my dream here, it would include a total fitness center, and day care and elder care facilities—all under one roof," he said. "That's the prototype of what's happening in private industry now."

Although hardly new, employee services outfits such as R&W are quickly gaining acceptance in corporate America as managers balance the cost of recreation facilities against the cost of health care when employees fall ill.

"Employee health at the worksite is economically important," said Schools, noting that the first employee service organization began in the late 19th century when National Cash Register Co. in Dayton, Ohio, spon-



Hazel Rea, deputy director of NIMH's intramural research program, was president of R&W several decades ago. An attraction to theater productions drew her to R&W soon after her arrival here in 1949.

sored a company picnic and sports league. "Companies realize that their health care bills will be smaller if their employees don't smoke and do exercise."

During the 1960s, Schools recounted, fitness and day care gained ascendance as important employee services.

"The most recent trend has been toward service to the community," he said. "President Bush has advocated that employee associations make more of an effort to serve their own communities, to become one of those 'thousand points of light.'"

While the recreation side of R&W has always been popular at NIH, the welfare side has also enjoyed a natural audience—the patients who come here for treatment. All patients and their families are automatically given guest membership in R&W.

"These days, we're more attuned to special events than we were in the past," says Schools. "Collecting operating funds for the Children's Inn, the Friends of the Clinical Center and Camp Fantastic is our big goal now, but we will continue to offer a wider array of services to employees."

Among the most popular services, particularly for foreign workers, are the 30 or so day trips planned each

year by Kelly Goka, director of recreation and member services for R&W. These include excursions to Atlantic City and New York City, beach outings to Ocean City, bike and canoe trips, tubing voyages and horseback rides. Other common trips include walking tours of Washington area attractions such as the White House, National Cathedral and Arlington Cemetery, shopping trips to outlet stores in Reading, Pa., and bus trips to Orioles' games.

"Day trips are particularly good for our international employees," noted Schools, "because they get to do things they wouldn't ordinarily plan to do alone."

R&W also arranges discount trips to such national attractions as Disney World, Sea World, Busch Gardens and Kings Dominion.

Forty years ago, when R&W was in its infancy, it still planned ambitious itineraries for its members. The membership fee then was 50 cents a year and enabled employees to sign

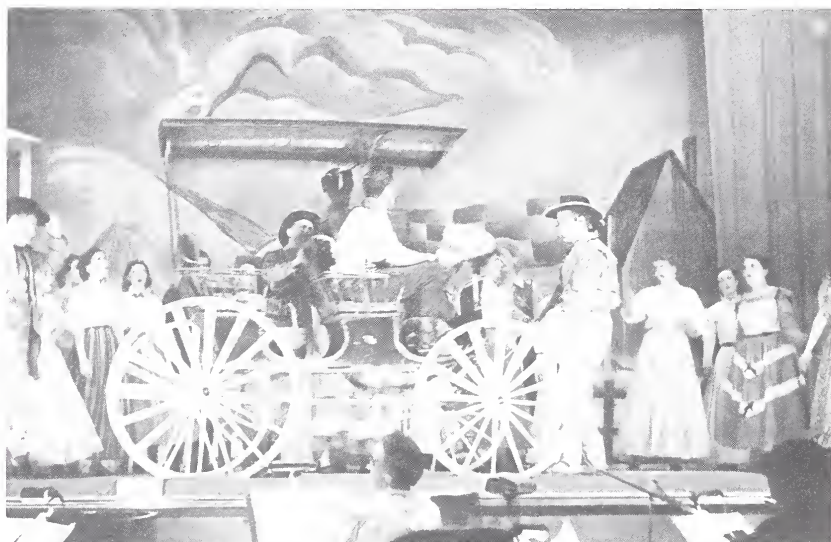
up for an annual sea cruise to Bermuda. Stay-at-homes could enjoy a popular R&W Bridge Club or plant vegetables in gardens on campus, under the auspices of the R&W Garden Club.

Hazel Rea, deputy director of NIMH's intramural research program and a former R&W president, remembers those days fondly. Born 79 years ago in Van Buren, Ark., she came to Washington in 1935 and NIH in 1949.

"Very soon after arriving at NIH I got involved with R&W," she recalls. "I was involved with the Hamsters first. We used to have so much fun with that. Of course the place was much smaller then. NIMH had only 60 people then and now we have 600 in intramural research."

A dancer from her youth, Rea joined the Hamsters when the group needed a choreographer for productions such as *Oklahoma!*, in which recent DCRT director Dr. Arnold "Scotty" Pratt played a lead role, along with distinguished cancer researcher

(continued on p. 16)



The glory days of the Hamsters, NIH's R&W-sponsored theatre group, included major productions such as *Oklahoma!*, in which talented staff not only acted out the parts, but also painted the scenes and played the score. "NIH has always had very talented employees," said Hazel Rea, an ex-R&W president.

(continued from p. 15)

Dr. Bruce Ames, now at the University of California. Rea's daughter Ruth also danced in the shows.

"Not that many (people) were involved in R&W back then," Rea remembers. "We were always after new members."

R&W started the first post office on campus, said Rea, mainly for patients' use.

"Our name was R&W, but we did very little in welfare, I noticed. We used to make loans to employees in financial straits. We also began to pay a small death benefit—a little cash at the moment of need to emphasize the welfare aspect of our name."

Bridge tournaments, softball (NIH teams were perennial Metro area champions) and chess were the most popular "R" activities.

"If there were enough people interested, we'd back it," Rea said. R&W also rented sports equipment and ran a small dark room for photographers.

"Getting space at that time was just as difficult as it is now," she stated. "NIH was always supportive of R&W, however, and tried to accommodate our needs."

Before it opened a gift shop in Bldg. 10, again primarily for patient use, R&W relied on "blind stand" concession sales and membership fees for funds. "We had no overhead, and a lot of cash," Rea said.

She used to counsel young people starting administrative careers at NIH, particularly the shy ones, to get involved in R&W clubs, for the contacts it would provide.

Says Schools today, "Club membership offers the opportunity to develop leadership skills. It can pay you back on the job."

Rea served as president of the League of Federal Recreation Associations in 1961, 1962 and 1964; Schools was president in 1980-81.

"But I gave up R&W eventually," Rea related. "I had served my time on it."

Agnes Richardson, who was president of R&W from 1983 to 1987, just can't give it up.

"I see myself staying in R&W until I leave NIH," said Richardson, who came here in September 1973 and is now corresponding secretary for R&W. Under her leadership, the NIEHS branch of R&W opened, R&W joined the effort to raise funds for the Children's Inn, the Fitness Center was started and dry cleaning became an R&W service.

"In 1974 I became an alternate representative to R&W from NEI. I became a rep the next year and have been in ever since."

Today's R&W is overseen by president Helen Gift, a research sociologist at NIDR and chief of the institute's health promotions section. A native of Kingsport, Tenn., she came to NIH 4 years ago from Chicago, where she held posts in health planning, survey research and market research.

Like Schools, Gift makes health promotion a major goal for R&W, which links nicely with her job at NIDR and appointment to NIH's prevention coordinating committee.

A recreation facility that includes a swimming pool and full court gymnasium is one of her ambitions; it would be open to patients and staff. Gift notes ruefully that the local YMCA has recently forbidden NIH AIDS patients from using its pool facilities. And that renovations to the 14th floor gym in the Clinical Center have curtailed some indoor sports activities.

"NIH should be the premier agency for health promotion and facilities," she stated.

Gift's second major goal is to "continue to provide civic and charitable services and opportunities for volunteers." The Children's Inn, which

opened in June, will continue to require much volunteer effort, she said.

"R&W is there to make people healthier and happier in their workplace," Gift said.

To the extent that it is possible, she tries to accommodate employee suggestions. "All kinds of interesting ideas come up," she said. Examples include selling foreign newspapers at gift shops, vending Metro subway passes, offering disability insurance, and expanding self-help courses related to smoking cessation and weight-watching.

"We're pretty responsive on things when we know the employees want them," Gift said.

Looking back at what it has offered employees for the past 45 years, it's safe to conclude that R&W will likely remain the flagship of federal employee service associations.



Senator Joseph E. Ransdell of Louisiana was the sponsor of the act that, 60 years ago, renamed the Hygienic Laboratory the National Institute of Health. Signed by President Herbert Hoover on May 26, 1930, the Ransdell Act also authorized NIH to receive funds for fellowships in support of basic research.

NIH Notes for January-May 1990

HONORS AND AWARDS

Dr. Anthony S. Basile Jr., a senior staff fellow in the Laboratory of Neuroscience, NIDDK, has been chosen as the recipient of the 1990 Mathilde Solowey Lecture Award in the Neurosciences . . . **Dr. John Daly**, chief of NIDDK's Laboratory of Bioorganic Chemistry, was honored for his "pioneering research on adenosine and the selective adenosine agonists and antagonists" at the conference on "Purine Nucleosides and Nucleotides in Cell Signaling: Targets for New Drugs" held in Rockville last fall . . . **Dr. Anthony S. Fauci**, NIAID director, received the 1989 Helen Hayes Award for Medical Research at a ceremony in New York City. Hayes presented him the award for his basic research in demonstrating the immunopathogenic mechanisms of HIV infection and for developing strategies for the therapy and immune reconstitution of patients with AIDS . . . **Dr. Naomi Lynn Gerber**, chief of the CC's department of rehabilitation medicine, won the Government Employees Insurance Company's 1989 Public Service Award in the field of physical rehabilitation. Gerber and her colleagues developed a comprehensive management program for infants and children with osteogenesis imperfecta (brittle bone disease) . . . **Dr. Phillip Gorden**, NIDDK director, was named Vanderbilt University School of Medicine's distinguished alumnus for 1990. Along with a medal, he received a plaque citing him "for his high achievement through outstanding leadership and contributions to the profession as distinguished physician, clinical scientist and progressive leader." . . . **Dr. Florence P. Haseltine**, director of the Center for Population Research at NICHD, has been elected to the board of directors of the American Association for the Advancement of Science. In her platform statement prior to the AAAS election, she pointed out that her varied educational and scientific background parallels the interdisciplinary interests of AAAS and its journal *Science*. Her 4-year term began Feb. 1990 . . . **Dr. J. Terrell Hoffeld**, executive secretary of the two subcommittees of the oral biology and medicine study section in the Referral and Review Branch

of the Division of Research Grants, was awarded fellowship status in two honor organizations: the Academy of Dentistry International and the American College of Dentists . . . **Dr. Igor Klatzo**, chief of the NINDS Laboratory of Neuropathology and Neuroanatomical Sciences, received the highest award of the Polish Academy of Sciences, the Medal of Nicolaus Copernicus. He has collaborated for more than 28 years with Polish scientists in pioneering research to understand how ischemic insult damages the brain . . . **Dr. Denis Le Bihan**, visiting associate in the CC department of diagnostic radiology, has been awarded the Prix Foucault 1989 from the French Society of Physics. The award recognizes his research in molecular diffusion and blood microcirculation using magnetic resonance . . . **Dr. Edward D. Korn**, scientific director of the intramural research program, and chief of the Laboratory of Cell Biology, NHLBI, has been elected to membership in the National Academy of Sciences . . . **Dr. Malcolm A. Martin**, chief of NIAID's Laboratory of Molecular Microbiology, gave on Feb. 14 the 1990 honorary R. E. Dyer Lecture entitled "Retroviruses: Where Did They Come From, and Where Are They Going?" . . . **Dr. Louis H. Miller**, head of the malaria section in NIAID's Laboratory of Parasitic Diseases, has been elected to membership in the National Academy of Sciences . . . **Dr. Howard A. Nash**, chief of the section on molecular genetics in NIMH's Laboratory of Molecular Biology, has been elected to membership in the National Academy of Sciences . . . **Dr. Roger J. Porter**, NINDS deputy director, has been elected to head two professional epilepsy organizations: the 1,500-member American Epilepsy Society and the International League Against Epilepsy, a group that sponsors international scientific conferences. One of his goals will be to strengthen links between professional societies and lay and patient support groups . . . **Dr. Steven M. Schnittman**, a senior staff fellow in NIAID's Laboratory of Immunoregulation, was granted one of four 1989 Young Investigator Awards from the American Society for Microbiology. His research on the immunopathogenesis of human immunodeficiency virus has significantly enhanced the understanding of how HIV causes damage to the immune system . . . **Dr. T. Franklin Williams**, NIA director, received two honors: the Claude D. Pepper Award sponsored by the Sandoz Pharmaceuticals

Corp. for his outstanding contributions to advance the field of aging research, and induction into the Johns Hopkins Society of Scholars . . . **Doris C. Wong**, a microbiologist in NIAID's Laboratory of Infectious Diseases, hepatitis viruses section, was recently honored for her "significant contributions to hepatitis research" at the Hawaii International Symposium on Hepatitis B held in Honolulu. She was the only recipient from the United States.

APPOINTMENTS AND PERSONNEL CHANGES

Dr. Marin Allen, a full professor in and chair of Gallaudet University's department of television, film and photography, recently joined the National Institute on Deafness and Other Communication Disorders as chief of its Planning and Health Reports Branch. She will also be the public information officer for NIDCD . . . **Dr. Lynn M. Amende**, who was at FIC since 1987 as program administrator for the international fellowship program, has joined the NHLBI staff as an executive secretary in the Review Branch, Division of Extramural Affairs, where she will review applications for the contracts, clinical trials and training review section . . . **Dr. Katherine L. Bick**, NIH deputy director for extramural research, left NIH in March after serving in various capacities during the past 14 years. She now works for the Florence, Italy-based Studio Multicentrico Italiano Sulla Demenza, as its United States representative . . . **Donna A. Brooks** has been named personnel officer for the National Institute on Deafness and Other Communication Disorders. For the past 12 years she worked at NHLBI in personnel . . . **Dr. George J. Galasso**, NIH associate director for extramural affairs, has been appointed acting deputy director for extramural research upon the resignation of **Dr. Katherine L. Bick** from that post. In addition, Galasso will continue to serve in his current associate director position . . . **Sandy Guilford**, formerly assistant director of the Montgomery County Volunteer Center, has been selected as the director of the FIC's Volunteer Program . . . **Dr. Jules V. Hallum** has been named director of the Office of Scientific Integrity, part of the Office of the Director, NIH. He comes to NIH from his former position as professor and chairman of the department of microbiology and immunology at

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the Oregon Health Sciences University in Portland. The OSI conducts inquiries and investigations on instances of possible misconduct in science and assists universities in the development of their programs to promote the ethical conduct of science ... **Janyce N. Hedetniemi** has been named chief of the Office of Program Analysis, NIGMS. She will be responsible for program and policy analysis, evaluation and planning activities, and the development of NIGMS research and training programs ... **Dr. Marvin A. Kalt**, chief of the NIA scientific review office, has been appointed deputy director of NCI's Division of Extramural Activities. He will oversee NCI's peer review processes for grants, contracts, and cooperative agreements ... **Gyula Kovach** has joined the Division of Safety staff as chief of the Environmental Protection Branch. He plans to "develop NIH's program to act as a prototype to other federal agencies and biomedical research facilities" ... **Dr. Eileen Lennon** has been named to the NCRR staff as a microbiologist in the General Clinical Research Centers Program. She most recently worked at the Uniformed Services University of the Health



Roskey Jennings (l) receives congratulations from Dr. William F. Raub, acting NIH director, on his 60-year anniversary of working at NIH. On Mar. 25, 1930, Jennings began the first day of a 3-month temporary job at the Hygienic Laboratory. He is still working here at 80 putting in a full day's schedule in NIAID's Laboratory of Viral Diseases. At a party for him Raub said: "He exemplifies the ultimate government employee. He is a compliment to NIH with his dedication and hard work. He has always kept his eye on the ball as to what is important. If the rest of us did half as well, this place would be terrific."

Sciences, where she had been a research associate since 1988 ... **Dr. Joan Austin McGowan**, health scientist administrator, has been appointed director of the new Bone Diseases Program within NIAMS' Musculoskeletal Diseases Branch. She is a former NIH grants associate. Before coming to NIH in 1988, she was assistant professor of pediatrics (biochemistry) at Harvard Medical School. In her new post, she will be responsible for overseeing research grants in osteoporosis, Paget's disease, heritable connective tissue disorders and other bone diseases, and in bone biology ... **Dr. John A. McLachlan** has been named director of the Division of Intramural Research at NIEHS. He joined the institute as a research associate in 1973. In his new post, he will lead one of four major divisions within the institute, one comprising eight laboratories and a branch all devoted to basic biomedical research ... **Jack Mahoney**, NIH associate director for administration, is serving a 6-month stint as acting deputy assistant secretary for health operations, DHHS; he began the assignment on Mar. 26. While he is away on detail, his NIH post will be filled by **Carl Fretts**, who is director of NIH's Division of Contracts and Grants ... **Dr. Manuel Miranda**, former staff director for the U.S. House of Representatives select committee on aging, has been appointed assistant director for interdisciplinary research at NIA. He had been a faculty member at UCLA, in the school of social welfare since 1978, and was on leave from that position to head the congressional committee. From early 1984 through July 1985, he was a visiting scientist at NIMH, where he conducted an analysis of NIMH-funded research on Hispanic mental health ... **Jalil Hameen Mutakabbir** was appointed manager of the Black Employment Program in NIH's Division of Equal Opportunity, Equal Opportunity Branch ... **Dr. James F. O'Donnell** has been named director of the Office of Extramural Programs. It is a newly created position in the Office of Extramural Research, Office of the Director, which is responsible for extramural staff training, liaison with research institutions, grants policy and extramural program management, appeals, resource training and resources policy, the Small Business Innovation Research Program and other special programs operated out of OD. He comes to the position from DRR, where he had been deputy director since 1976 ... **Dr. Lawrence J. Prograis, Jr.**,

former NIAID medical staff fellow, was recently appointed chief of the Asthma and Allergy Branch in the Division of Allergy, Immunology, and Transplantation (DAIT) ... **Hillel Soclof** has returned to NIH as the administrative officer for Division of Intramural Research, NHLBI. Formerly with the Baltimore Cancer Research Program of the National Cancer Institute, he coordinated the operational aspects of the research center and directed its fiscal and administrative activities ... **Dr. James F. Taylor** was chosen associate director for assurance in the NIH Office of Animal Care and Use (OACU). OACU is responsible for ensuring NIH intramural compliance with all relevant laws and regulations on care and use of laboratory animals. He retired from the U.S. Army Veterinary Corps after 25 years of service specializing in laboratory animal medicine ... **Tommie Sue Tralka** has been named director of NIDDK's Digestive Diseases Centers Program and project officer for the institute's liver transplantation database ... **Dr. Paul A. Velletri** has moved to the Review Branch, NHLBI, from the Pharmacological Sciences Program, NIGMS. In his new position he will be responsible for managing the review of a wide variety of grant, cooperative agreement and contract proposals ... **Fredette West** has been named budget officer for NEI. In this job she is the principal financial advisor to NEI senior staff ... **Dr. Robert A. Whitney Jr.**, has been selected as director of a new organization named the National Center for Research Resources (NCRR), which was created when the Division of Research Resources and Division of Research Services were merged. He had been director of DRS since Nov. 1985 and acting director of DRR since Oct. 1988. DRR and DRS both conducted programs providing resources for biomedical research: DRR developed and supported research resources extramurally, through grants and contracts, and DRS provided research services directly to NIH investigators. NCRR will continue the full range of these services in integrated and extended ways ... **Dr. Arthur L. Zachary**, recently a faculty member in the department of biological chemistry at the University of Maryland School of Medicine, has joined the NIGMS Office of Review Activities. Interested in DNA structure and function, bacteriophage biochemistry and marine microbiology, he will review grant applications in the area of the genetic basis of disease.

RETIREMENTS

Evelyn Carlin, an employee of NIH since 1961 and grants management officer for NIGMS since 1971, retired on Mar. 31. She was one of four NIGMS employees who had been with the institute since its creation 27 years ago and had a long and distinguished career there. Her retirement plans will revolve around her family and her volunteer work at St. Paul's Methodist Church in Kensington ... **William**

Comstock of NHLBI's Laboratory of Biophysical Chemistry has retired after 39 years at NIH. He came to NIH in 1951, first with NCI and later with NIAMD. In 1967 he moved to NHLBI's Laboratory of Chemistry (now the Laboratory of Biophysical Chemistry), where he has been in charge of operating the LKB mass spectrometer. During his NIH career he played with the NIH Band and in retirement he will continue to play tenor saxophone and spend more time with his family ... **Dr. John L. Decker**, director of the

Clinical Center since 1983, retired on June 1. He joined NIH as chief of the Arthritis and Rheumatism Branch, NIAMD, in 1965. He also served as clinical director of the National Institute of Arthritis, Metabolism and Digestive Diseases from 1976 to 1980. In April he received the Master of the American College of Physicians; he is the first NIH physician to receive this honor. **Dr. Saul W. Rosen** has been named acting CC director ... **Frances Goff**, a grants management specialist in the Office of the Associate Director for Extramural and Collaborative Programs, NEI, has retired. She had completed 30 years of federal service, 20 of which were at NEI. She and her husband plan to spend time at their home at Hoopers Island on the Chesapeake Bay, travel and she hopes to work part-time at a university ... **Patricia L. Greenfield**, administrative officer for the Division of Contracts and Grants, OD, since 1979, retired after more than 35 years of service. She joined NIH in January 1959, following a tenure of more than 4 years with the Department of the Army at Ft. Detrick in Frederick, Md. She worked in several positions in NIDDK. In 1971, she joined NIAID and served as committee management officer until 1973, when she became an administrative officer with NIMH. She hopes to travel throughout the U.S. and abroad and spend time in Brunswick, Md., where she built a new home ... **Assis-**

tant Surgeon General Eileen G. Hasselmeyer retired after more than 29 years of active duty with the Public Health Service Commissioned Corps; 26 years were spent with NICHD. During her last assignment she was associate director for scientific review, NICHD, and special assistant to the director, National Center for Nursing Research. In retirement, she will continue to be involved in activities related to nursing and to the support of SIDS research, but she also plans to spend more time with her grandniece and grandnephew ... **Dr. Richard C. Henneberry** has retired after 18 years in the NINDS Laboratory of Molecular Biology as the head of the laboratory's neurobiology section where he pursued a research career culminating in exciting work with neurotransmitters. He is now a vice president with the Environmental Health Institute in Pittsfield, Mass. ... **Dr. Arnold W. (Scotty) Pratt**, director of the Division of Computer Research and Technology since Aug. 1966, retired June 1. He joined NIH in 1948 in the Laboratory of Physical Biology. A year later he moved over to NCI's Laboratory of Physiology where he eventually became head of the energy metabolism section. At NCI he became interested in the ways computers might be used in biomedical research. This interest and subsequent research in the field of computational linguistics led to his being named DCRT's director ... **Richard Stewart**, property and space management technician at NEI for the last 9 years, has retired. He had completed almost 37 years of federal service, all of them spent at NIH. He plans to spend his time enjoying the outdoors by fishing, hunting and gardening.

DEATHS

Dr. M. Zain-ul-Abidin, 57, a health scientist administrator with the Division of Research Grants, died on Jan. 10 of multiple myeloma. He initially served as the executive secretary for the biomedical sciences study section, reviewing fellowship applications. He subsequently became executive secretary of the molecular biology study section, a position he held until his death ... **Dr. Edwin H. Beachey**, 55, professor of medicine and of microbiology and chief of the division of infectious diseases at the University of Tennessee College of Medicine, Memphis, and associate chief of staff for research and develop-

ment at the Memphis Veterans Administration Medical Center, died Oct. 27, 1989, of cancer. He was a research fellow at NIH in Dr. Roger Coles' section in the Laboratory of Infectious Diseases, NIAID, from 1964 to 1966 ... **James H. (Harry) Belcher**, medical biological technician with NIAID's Laboratory of Molecular Microbiology, died in Dickerson, Md. He joined NIH's Division of Infectious Diseases in 1947. He worked with investigators Drs. Lawrence Kilham, Karl Habel, Wallace Rowe, and Malcolm Martin whose work defined the cutting edge of research on viruses. He was the inventor of the Belcher Wild Animal Catcher. In recent years, he has been listed as coauthor on publications describing experiments with human immunodeficiency virus (HIV) in transgenic mice. These animals were totally under his care ... **Dr. Chapman H. Binford**, 89, died Feb. 9 at his home in Arlington from congestive heart failure. He was an authority on leprosy and fungal and tropical diseases. From 1930 to 1976, he served in the U.S. Public Health Service and he worked at NIH in the 1940s. He was also at the Armed Forces Institute of Pathology and the Leonard Wood Memorial (Leprosy) Foundation ... **Captain J. Manson Brown**, 63, NIH radiation safety officer from 1963 to 1972, died Jan. 8. He was instrumental in developing the first NIH radiation safety guides, numerous radiation safety training programs and radioactive waste disposal facilities at NIH, all of which now serve some 2,000 laboratories and 5,000 users of radioactive materials at NIH. Partly as a result of his leadership, NIH became a worldwide model for safety in biomedical research with radioactive materials. He was a pioneer during a period in which radiation safety in biomedical research was a new and unexplored discipline. His lasting contributions as a health physicist remain in the current radiation protection program in the NIH Division of Safety ... **Dr. G. Robert Coatney**, 88, a noted malaria researcher who was associated with NIAID over several decades, died on Mar. 11 in Atlanta, Ga. He was head of the Malaria Program at NIH from 1940 to 1966. He worked in the Laboratory of Tropical Medicine and then was chief of the Laboratory of Parasite Chemotherapy. He retired May 31, 1966, and joined the faculty of the Louisiana State University School of Medicine as professor of pharmacology ... **Philip Chester Coleman**, 58, NLM staff
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member since 1954, died suddenly on Mar. 7. When the library moved from its original location in Washington, D.C., in 1962, he helped move the entire collection to the new location. Over the years he worked in various capacities at NLM ...

Dr. Dorland J. Davis, 78, the third director (1964-1975) of NIAID, died of cancer Apr. 11 at the National Naval Medical Center in Bethesda. He retired in August 1975 as an assistant surgeon general, U.S. Public Health Service Commissioned Corps, after a 36-year career marked by scientific achievements and administrative innovations. He had been at NIH since 1939, except for a 1-year Department of State assignment in North Africa during World War II. In 1954 he was appointed chief of the Laboratory of Infectious Diseases at the National Microbiological Institute (now NIAID). After serving as associate director in charge of research and from 1962-64 as director of intramural research, he was named NIAID's director in 1964. As NIAID director his interest in tropical medicine and international research led to NIAID's leadership in programs such as the the U.S.-Japan Cooperative Medical Sciences Program and the International Centers for Medical Research Training. He was instrumental in expanding the institute's research on allergic diseases. He was the recipient of many awards and a member of many professional societies and boards. After his retirement he worked with the American Social Health Association as its founder and first chairman, developing a research and fellowship program ... **Dr. John Carol Eberhart**, 82, a longtime research administrator in the federal government, died of cancer Mar. 11 at the Clinical Center. He was the senior advisor to the deputy director for intramural research in the Office of the Director, NIH. He first joined NIMH as a training specialist in 1947 and served as chief of the NIMH Research Grants and Fellowships Branch from 1949 to 1954. He left NIMH in 1954 to join the staff of the Commonwealth Fund, but returned to the institute as director of intramural research, administering the government's own laboratories that conduct basic and clinical research on mental disorders. During his administration, the NIMH program developed into one of the best neuroscience and behavioral research programs devoted to the study of mental illnesses. He retired from that position in 1981, but was immediately

reemployed for the post he held until his death. He was involved in developing policies and programs that provided research and training opportunities and appropriate mechanisms to ensure the continued excellence of biomedical research ... **Dr. Robert H. Felix**, 85, an authority on drug addiction and alcoholism who was the first director of NIMH (1949-64) and a past president of the American Psychiatric Association, died Mar. 31 at his home in Sun City, Ariz., of complications from Parkinson's disease. In 1933 he joined the Public Health Service as an assistant surgeon and was assigned to the Medical Center for Federal Prisoners in Springfield, Mo. Three years later, he became a staff psychiatrist at the federal narcotics addiction treatment facility in Lexington, Ky. After service in World War II he returned to the PHS in 1944 as assistant chief of the hospital division of the Bureau of Medical Services and was chief of the mental hygiene division until 1949. In that 5-year period he helped develop the Mental Health Act of 1946, part of which created NIMH. He was appointed the institute's first director and served until he retired from federal service in 1964 with the rank of assistant surgeon general and rear admiral. He then joined the faculty at St. Louis University where he was professor of psychiatry and dean of the medical school for 10 years. From 1975 to 1985 he was research director of the Scottish Rite Psychophrenic Research Program in Lexington, Mass. He moved to Arizona in 1986 ...

Dr. Earl Fisher Jr., 75, died of a sudden heart attack on Nov. 18, 1989, at Gleneden Beach, Ore., where he had moved with his wife Thelma after they had both retired from work at NIH earlier in the year. In 1977, after a career in academia, he joined NIH, where he was affiliated with the Division of Research Grants and the Division of Research Resources. He was an effective and well-respected executive secretary for a series of study sections until his retirement ... **Dr. Ernst Freese**, 64, an internationally noted scientist whose career spanned the field of particle physics, molecular biology and genetic engineering, died Mar. 30 at Frederick Memorial Hospital of a cerebral hemorrhage. He worked for NINDS throughout his 27-year federal career. He joined NIH in 1962 as chief of the Laboratory of Molecular Biology, a post he held until his death. While remaining active as an investigator, he also helped manage the NINDS research program. Most

of his early research focused on the relation of chemicals to cancer. His later work was in the study of molecular control of genes that affect brain function. He was a member of many professional societies and the recipient of several distinguished awards ... **Mary S. Godwin**, 46, an administrative assistant in NCI's Division of Cancer Etiology, Chemical and Physical Carcinogenesis Program, died Jan. 20 of injuries she received in a car accident in Hanover, Pa. ... **Dr. David Goldfarb**, 71, a leading Soviet geneticist who became a Fogarty scholar-in-residence at NIH, died of heart failure and diabetes on Feb. 24 at Georgetown University Medical Center in Washington. He had been granted permission to leave the U.S.S.R. in October 1986. He became a Fogarty scholar in November 1987, and was preparing a history of Soviet biomedical science in the 1940s and 1950s. He was also assessing current trends in Soviet scientific research. In his latest term at FIC he had been on the NIH campus since December ... **Grace B. Hoehn**, 73, a retired NIH medical research grant reviewer, died of respiratory failure Feb. 7 at Sibley Memorial Hospital. She began working for NIH in 1939 and retired in 1969 ... **Jean M. Hudgins**, supervisory budget analyst in NIAID's Financial Management and Information Systems Branch, died recently of a heart attack. She came to NIAID in 1982 and she eventually monitored all of NIAID's extramural grants budgets ... **Dr. Barney Charles Lepovetsky**, director of NCI's Office of Technology Development (OTD), died Mar. 24 of cancer at his home in Ijamsville, Md. He had come to work at NIH after being both a professor of microbiology and earning a law degree. From 1965 to 1974 he held numerous positions at NIDR. He joined NCI in 1974 as executive secretary of the cancer control grant review committee. In 1975 he was appointed chief of the Training Grants Branch for the Division of Cancer Research Resources. In 1986 he became director of OTD serving as NCI's chief advisor on legislation and the implementation of the Federal Technology Transfer Act of 1986 ... **Joan H. Mahoney**, 62, a retired supervisor of employee relations at the Office of Personnel Management, died of cancer Jan. 17 at her home in Bethesda. In the late 1960s and early 1970s she worked in the personnel office at the Clinical Center. In 1973 she transferred to the OPM ... **Mildred M. Morgan**, 71, a retired secretary at NIMH, died of

cancer Apr. 1, at her home ... **Dr. Joseph V. Michalski**, 75, a retired pathologist and official in the research grants review section of the NIAMD, died of cancer Apr. 24 at his home in Silver Spring. He worked at the NIH from 1958 to 1974 when he retired ... **Robert Leroy "Mussy" Musgrove**, 62, of Livingston, Tx., formerly of Bethesda, a retired pipe insulator at NIH, died of cancer Apr. 28, at Memorial City Hospital in Houston. He retired from NIH in 1977 ... **Doris Dennison Parkinson**, 71, a retired office manager in the cholera treatment research center at NIH, died of renal failure Feb. 12 at Sibley Memorial Hospital. She joined the cholera treatment research center in the early 1950s and retired in the late 1960s ... **Tillie Wolk Pollock**, 75, retired chief of management policy at the NIMH, died Nov. 9, 1989, at George Washington University Hospital of complications after a heart attack ... **Dr. Pierre F. Renault**, 53, deputy director of NIDDK since 1983, died of acute leukemia May 15 at the Clinical Center. He joined the institute in May 1982 as associate director for program planning and analysis. He joined the U.S. Public Health Service in 1974 and served as chief of the clinical behavioral branch of the National Institute on Drug Abuse of the Alcohol, Drug Abuse and Mental Health Administration. In 1980 he became associate director of the National Center for Health Care Technology, an assignment that included reviewing technology and making recommendations concerning health care financing and Medicare coverage ... **Dr. David Symmes**, 60, a NIH neurophysiologist, died of cancer Apr. 8 at his home in McLean. At his death he was chief of the section on brain behavior and communication at the NICHD. His principal research was in the origins and development of complex behavior such as communication between mother and infant monkeys, the role of play in various species of animals and the effect of play on motor development ... **Isidore Wodinsky**, 71, a retired vice president of Arthur D. Little, Inc. of Cambridge who headed its cancer chemotherapy research program, died June 2 at his home in Jamaica Plain, Mass. He joined the company in 1959 as head of its biology section. Prior to that he served at the Army Institute of Pathology in Washington during World War II and worked at NIH in the 1940s and 1950s.

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American Board of Otolaryngology. He has served as president of the American Broncho-Esophagological Association, the Society of University Otolaryngologists-Head and Neck Surgeons and the Association of Academic Departments of Otolaryngology-Head and Neck Surgery. Snow is currently the president of the American Laryngological Association. Throughout his career he has

taught medical students and resident physicians and carried out research. In his practice, he has dealt with the clinical problems of deafness, dizziness, loss of the senses of smell and taste and the disorders of voice, speech and language. He brings to his new position a wealth of administrative, clinical and research experience in the areas served by the new institute including hearing, balance, smell, taste, voice, speech and language.



On Monday, May 21, NIH was the setting for a demonstration by AIDS activists who were protesting what they felt was the slow pace of AIDS research and treatment. Sixty-one of the 1000 protesters were arrested on campus in the demonstration dubbed "Storm the NIH" by organizers from the AIDS Coalition to Unleash Power (ACT UP). Twenty-one people were also arrested at an NIH rental building in Rockville. "We have a great deal of empathy with those who are frustrated with the pace of biomedical research," acknowledged Dr. Anthony Fauci, who in addition to directing NIAID is also NIH associate director for AIDS research. "But critics of the pace of HIV research don't understand the nature of biomedical investigation. Progress against HIV has actually been unprecedented in the history of medicine." He went on to say that there were no hard feelings. "I know personally many of the leaders of today's demonstration. I understand their need to vent their frustration. It's terribly understandable by us because the only time you've done enough is when you have the answer. And we don't yet have the answer. But we will continue to give our very highest level of effort."

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When not traveling abroad, which he does frequently, Fredrickson can be found either in the lab on the 7th floor of Bldg. 10 or in a study near the reading room at NLM, where he is busy writing and collecting his papers.

"I still do a lot of observing of NIH, for I've a huge investment of time and affection in this campus. I enjoy my position here now without responsibility for NIH, but I still fuss and worry about it, of course, like all good alumni," he continues.

"NIH is a unique and remarkable place. It is a great scientific organization yet embedded at the interface with the public's support for research. This is where the relationship problems between high science and high government and between society and research have to be played out. Civilization has a big stake in the successful outcome.

"I don't attempt to do 'wet lab' research. I enjoy going to clinic and lab meetings and roaming the halls of my old haunts in Bldg. 10 when I'm in town. You can learn a lot this way. It is necessary to keep those connections open if you want to be a good consultant because science is rapidly changing."

As part of his involvement with the European community, Fredrickson will be reviewing what has happened to regulation of recombinant DNA research since NIH established guidelines involving recombinant DNA research in 1975.

"In June 1976, we sent a copy of the first NIH Guidelines in diplomatic pouches to every nation in Europe," he says. "Now, the European community has begun to seek coordination of research on engineering and the human genome. We need to understand the outcomes for they also affect our own research and our biotechnology industry.

"I am pleased to note that in Europe they are beginning to hold consensus conferences, which were started here at NIH. In fact, they are often called 'NIH consensus' conferences. It is good to have the recognition accorded to NIH," he says proudly. "Just one of our contributions to the world and science."

According to Fredrickson, Thomas Parran is really the parent of modern NIH. Although NIH was established in 1930, it was Parran, while serving as Surgeon General (1936-1948), who developed strategies to mount a war on chronic diseases. After World War II ended, Parran had everything in place and thus NIH was the first agency with the authorities to supply research support for universities. NIH, along with the National Science Foundation, continues to lead today with more than 60 percent of total grants given in the biomedical sciences.

"Parran, in my view, the greatest

of the modern surgeons general," he continues, "sent Lewis R. Thompson (NIH director, 1937-1942) on a trip to Europe to look over the design of European labs. Our earliest structures at NIH bear a close resemblance, in Georgian architecture, to the first buildings of the Pasteur Institute. On my last trip there, I was struck by the resemblances."

Fredrickson continues: "NIH has a fascinating history particularly when you analyze all that has happened to that single institute since its establishment in 1930. By 1953, there were 10 institutes and it continues to grow. Take for example, NIADDK. It has been split many times over into new institutes. While we don't like Congress to do that, it really is a form of flattery. It shows they believe our model is one that works.

"NIH must always remain primarily a scientific agency," he states, "but it will have to learn better how to



Director of the National Heart Institute, Fredrickson meets with his staff. Seated next to him is Dr. Robert L. Berliner. Standing are (l to r) Drs. Morris Stampfer, John C. LaRosa, Robert Keimowitz and Bryan Brewer. That was in 1967. Today, Fredrickson is back at NIH working in Brewer's laboratory.

participate in evaluation of the technical side of health care. The technical choice is becoming indispensable to coping with costs of health in America. NIH's role is to make sure scientific facts are laid out for others to lay on their value judgements.

"NIH is crucial to the stability of academic research in this country. I am not sure every administration realizes it though. To leave NIH so long without a leader is a careless thing. The nation could never replace it (NIH) if it were to fade and disappear through neglect.

"I came here 37 years ago," he said. "I was chosen by Dr. James A. Shannon (NIH director at the time) to be one of the eight heart institute associates to work in the Clinical Center. In fact, I walked behind Shannon in two of his jobs—head of intramural research for the heart institute and then later as director of NIH.

"It was because of Shannon that I became director of the heart institute. When he asked if I would be the director, my lab was very productive and I didn't really want to leave. But I said 'Yes' for a year. At the year's end, I wanted to go back completely to the lab so I helped him find my replacement—Ted Cooper." Cooper went on to become DHEW's assistant secretary for health in 1975. "Things were simpler then, not as political as it is now.

"NIH always has had a political side to it," he said. "We've had enormous political support. You can't remove politics from here at this level. NIH is a creature of Congress more than any other agency largely because Congress has always seen that we got the money we needed even when the administration making the budgets stopped keeping pace with growth and inflation.

"You can't do basic research

without public support. That is as true today as it always has been. Basic science depends on public money and that is true in every country, not only the United States."

Reminiscing, Fredrickson recalled a meeting he initiated in Chicago in 1967 allowing America's heart surgeons to meet with Dr. Christiaan Barnard, who performed the world's first heart transplant. "When Barnard got up to speak, there were beads of sweat all over his face because his audience was made up of mostly American surgeons who had taught him all he knew. I thought then his achievement was a technical *tour de force*. I think now that I was wrong about that. I've often been too conservative about medical inventions."

Recalling the most exciting time of the past, he said, "Discovering a new disease like Tangier disease, named for an island in the Chesapeake Bay." It was on this island that Fredrickson was called in as a consultant to take a look at a young boy's condition.

"When I visited the island and had the opportunity to check other children in the family, I found that his sister had bright orange tonsils, a hitherto unknown example of a problem due to massive tissue storage of cholesterol. I realized that here was something that had not ever been described.

"It is like seeing a mountain no one else has ever climbed," he continued. "The gratification you can get out of this side of science—the putting of one more tile in the endless mosaic—makes it the most rewarding profession in the world.

"The original children are still patients here at NIH. There are now about 50 cases around the world. But you know, we still don't know after 30 years the cause, in molecular terms, of Tangier disease.

"I allowed myself to be distracted



In September 1973, Fredrickson and Dr. Robert Levy visited a lipoprotein laboratory in Leningrad, Russia, (as part of the US-USSR Cooperative Research Program). Standing (l to r): Professors Vera Gerasimova and Anatoly Kilmov, Fredrickson, Dr. Alexander Nichols, Levy, Drs. James Grizzle and Herman Tyroler.

from it over the years, but nothing can replace or quite match the game of science itself."

Fredrickson worked under five department secretaries while serving as director of NIH. When Joseph A. Califano Jr. came aboard, he told Fredrickson, "I'm not sure I want to keep you." Fredrickson replied, "I understand, Mr. Secretary, you might want to bring your own people in to work for you but I want you to grant me one thing—that is just 2 hours to tell you what NIH is all about.

"I had my time and when he later came to NIH for a visit, he announced from the podium, 'I looked everywhere for the best possible director for NIH and I discovered he was already here.' "

According to Fredrickson, it was in 1971 that the job became more politicized. At that time, the administration wanted to move the cancer institute out of NIH. Robert Marston, NIH director at the time, fought that battle and won but it cost him his job in the end.

(continued on p. 24)

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"Not that every president shouldn't have a choice," he says, "but policies change with each administration. And the stewardship of NIH should never be a political power."

Fredrickson was born in Canon City, Colo., and attended the University of Colorado for 1 year prior to moving to the University of Michigan, where he received both his B.S. and M.D. degrees. After graduation, he went to Boston for training in internal medicine and clinical and laboratory research at the Peter Bent Brigham Hospital, the Massachusetts General Hospital, and Harvard Medical School. It was in 1953 that he moved to the National Heart Institute as one of the first class of clinical associates to open the Clinical Center. He remained at NHI from 1953 to 1974, first as staff scientist, later section head, and then chief of the Molecular Disease Branch. While simultaneously maintaining his research, Fredrickson also served as the heart institute's clinical director (1961-1966), institute director (1966-1968) and director of the Division of Intramural Research (1968-1974).

In 1974, he left NIH to become the second president of the Institute of Medicine at the National Academy of Sciences. However, in 1975 he accepted the invitation of President Ford to fill the vacant chair of the director of NIH. He stayed throughout the Ford administration and into 1 year of the Reagan administration.

After resigning from NIH for the second time in 1981, Fredrickson spent 18 months as scholar-in-residence at the National Academy of Sciences. He left the academy in 1983 to serve as consultant, then vice president of the Howard Hughes Medical Institute. In 1984, he was appointed to the board of trustees of the institute and elected president and chief executive officer.

During his tenure at HHMI, Fredrickson conceived and developed the Hughes Cloister program, which brings medical students from all over the country to NIH for a year of training in NIH laboratories. HHMI is a non-profit medical research organization that was funded by the aviator-industrialist Howard R. Hughes and is the sole owner of the stock of Hughes Aircraft Co. At the time of Fredrickson's resignation in June 1987, the HHMI was the world's largest philanthropy with an endowment of more than \$5 billion and an annual budget of about \$250 million for medical research and related activities.

*"I allowed myself
to be distracted from
it over the years,
but nothing can replace
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of science itself."*

—Dr. Donald Fredrickson

Fredrickson serves as a member of the advisory committee on the NIH; chairman, scientific advisory committee, Research!America; advisory board for Issues in Science and Technology, and served on the White House Science Council from 1981 to 1989. He is a member of numerous organizations including the National Academy of Sciences, the American Academy of Arts and Sciences and the American Philosophical Society and he is a life member of the NIH Alumni Association.

An author of more than 250 scientific articles, numerous other papers and editor for five editions of *The Metabolic Basis of Inherited Disease*, Fredrickson is still busy writing and keeping his hand in the field that he loves—science.

Novello (continued from p. 1)

status—firsts for a U.S. surgeon general—alone lured headlines. From now on, however, the substance of her comments will gain unprecedented attention.

"This post is very different from NIH, where only the person who discovers a virus or a drug, or maybe the director, gets to talk," she said. "I won't talk often, but when the surgeon general speaks, there will be something to say."

Known chiefly for her leadership in pediatric AIDS, Novello began the interview by asserting, "I am going to take care of all patients with AIDS, not just pediatric patients. There is a little bit of Ryan White in every person with AIDS out there. They all deserve dignity and respect, not just the women, the children and the Hispanic. I am here for all the patients with AIDS."

Novello mentioned that, 2 years ago, she was confronted at a conference by a member of ACT UP, the increasingly militant AIDS Coalition to Unleash Power.

"This person challenged me to take a stand for children," she recalled. "Who could have guessed that, 2 years later, I would be in a position to do so? When they (activists) realize I am very much committed, I won't have trouble with ACT UP."

Reminded that she had large shoes to fill in replacing Koop, Novello said, "We're doing two different kinds of things these days. His personality is totally different from mine, but we are both very forceful. We're both pediatricians and that is about growth. Please, give me a chance to crawl before I learn to walk and run."

Novello conceives of her role as surgeon general as being "the voice of the people. I will go out and sense the pulse of the public and bring back my findings to the policy makers.

People are basically looking for a good doctor who has good sense and who cares for all of the people."

While pulse-taking will fortify her intuition, Novello is likely to be guided by data when planning her agenda. "You deal the cards when you have the data in front of you," she stated.

Already in the works is a conference on women's health and a 10-day visit this summer to Indian reservations, where she will address the PHS agency with the largest numbers of officers, the Indian Health Service. "I really want to look into it," she said.

Concerning women's health, Novello will address such issues as shelter for abused women, and breast and lung cancer rates in women. "By the year 2000, more women will die of lung cancer than breast cancer," she reported. "A workshop on women's health issues is timely and needed. I want to make them part of the surgeon general's mission."

Alarmed by data showing that women are often neglected in the design of clinical trials, Novello announced a new, "comprehensive, family-centered community care model for AIDS patients." Designed by NIH, HRSA and the Department of Defense, the prototype locates, under one roof, all of the myriad services that AIDS patients typically need.

"It will keep patients from having to go to many, many places instead of just one. But most importantly, this model will train potential foster parents so that an infected parent can die in peace if he or she has children," said Novello.

An HHS brochure on condoms, STDs (sexually transmitted diseases) and AIDS was published in May. Some 583,000 copies of the pamphlet, featuring pictures and text, are being sent out by the National AIDS Information Clearinghouse, the FDA and the National Institute on Drug Abuse.

"Sexual information should be

explicit," Novello said, "but with sensibility and sensitivity. What is good for one state might not be good for another state—that must be taken into account. We will try to educate in a way appropriate to the community."

Asked if clean needles for intravenous drug abusers would prevent AIDS, Novello said there are not

*"I will go out and
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bring back my findings
to the policy makers.
People are basically
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who has good sense
and who cares for
all of the people."
—Dr. Antonia Novello*

enough data to show that such a policy would change people's behavior. Queried on her position regarding fetal tissue research, she announced that she would abide by the department's official moratorium. Coaxed by a reporter to say something that might deviate from the party line, she punctuated her stand by playfully sticking a tongue out at her questioner.

"That's the pediatric aspect of me," she laughed, "I'm sorry."

Novello said she has been surprised by data on teen drinking in the U.S. "A recent study showed that two-thirds of adolescents drink, and one-third go on binges. We have eighth graders who consider themselves binge drinkers!"

Correlating traffic accident deaths with data on teen drinking, Novello set herself two public health goals: "These kids may not perceive that someone cares. That has to change. And they must be reminded of how much alcohol will rob them of their lives."

Novello was born on Aug. 23, 1944, in Fajardo, Puerto Rico. Born with a congenital malformation, she was hospitalized often as a child, she said.

"I think this is where I learned that everything has to have a chance to live." Thus her position on abortion, which is the same as President Bush's: Acceptable only in cases of rape, incest, or danger to the mother's life, and only the latter deserves federal funding.

Educated in public schools where her mother, Ana Delia Flores, was first her teacher then, in high school, her principal, Novello learned to treasure education and teachers.

"If you know my mother, you don't change schools when she's in charge," she explained. "She had a ruler that she called Catalina, and you had to know your ABC's."

"My mother (who remains principal of the high school Novello attended) is the most strong force in my life and my role model," she continued. "She always said that education will take care of you. She pushed me. I knew from very early on that teachers are here to serve you."

Novello's father died when she was young; her stepfather is an electrician.

The young Novello hated the name Antonia. "My friends had names like Lucy and Maria and Diana and I got stuck with the ugliest name," she recalled. "My mother told me that it would be a good name for a doctor someday. Mommy was right."

Novello graduated from the University of Puerto Rico in 1965 and received her M.D. degree from the same university in 1970. She served a pediatric internship and residency at the University of Michigan Medical Center from 1970 to 1973. In 1982-82, she earned a master's degree in public health from Johns Hopkins.

During her NIH career, Novello was most recently deputy director of

(continued on p. 26)

(continued from p. 25)

NICHD as well as that institute's AIDS research coordinator. Her research interests have included pediatric nephrology, health services administration and public health policy; she has published extensively in these fields. She is also clinical professor of pediatrics at Georgetown University Hospital and the Uniformed Services University of the Health Sciences.

*"I won't talk often,
but when the
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—Dr. Antonia Novello

Married for 20 years to Dr. Joseph Novello, a child psychiatrist known locally for a WMAL radio call-in show he hosted until recently, the new surgeon general has no children but has a cat named Nicky. "I also have one brother, two nieces and eight godchildren," she said. Her brother-in-law, Don Novello, is a nationally known comic actor whose stage persona is "the Rev. Guido Sarducci."

Asked if the comedian has incorporated the new surgeon general into his monologues, Novello responded, "He wouldn't do that. He has to return home some day."

When Novello returned home to Puerto Rico this spring, she was received joyfully by her homeland.

"The Puerto Ricans have all kinds of issues they wanted me to address," she noted, "but they will be dealt with in the context of U.S. health policy."

Exiting the interview, Novello cautioned journalists to be sure to "put my mother in good light." Only 4 days on the job and the new surgeon general was already giving her first advice.

NIH Credit Union Celebrates Golden Anniversary

A few days before Christmas in 1939, a handful of NIH employees gathered in Bldg. 6 and decided to establish a credit union. On Jan. 11, 1940, nine workers got together and, with \$75 in assets, formally established the NIH Federal Credit Union (NIH FCU).

"Money was tight in the thirties," recalls Howard F. Brubach, who was the 38th NIH'er to cast his lot with the member-owned cooperative. "I was in industrial hygiene, and that involved travel. We figured that a credit union would help on cash advances—that was the basic reason to start it."

Sharing space with a telephone

operator's office just off the lobby of Bldg. 1, the credit union attracted some 338 members out of 1,167 employees in its first year. Employees would make deposits of as little as a quarter at a time; the captain of the guard office in Bldg. 1 would enter the deposits in a ledger.

On May 10, 1990, the credit union celebrated its 50th year of service with a ceremony in Wilson Hall. Brubach, who had been present at the 25th anniversary, returned with his colleague Harry Diehl to mark the occasion.

"It has come a long way and it's a wonderful organization, believe



Cutting a cake to mark the 50th anniversary of the NIH Federal Credit Union on May 10 are Harry Diehl (l) and Howard F. Brubach, two of the credit union's original members. The NIH retirees were also on hand for the credit union's 25th anniversary in 1965.

me," said Brubach, who spent 50 years at NIH. "I've been with it since the start."

"I know the credit union is great," said Diehl, who was the 60th employee to join the union and who retired in 1974 after 40 years of service to NIH. "But so is NIH."

Congratulations abounded as eight speakers, including NIH acting director Dr. William Raub and a former U.S. senator (Roger Jepsen of Iowa, now chairman of the National Credit Union Administration) rose to honor the occasion.

Currently boasting 22,000 members and more than \$100 million in assets, the credit union is "now a healthy, growing, stable financial institution," said Lindsay Alexander, president and chief executive officer of NIH FCU.

"Attracting new members and improving services are two main goals for us today," she said. "Renewed spirit and diligence are the themes of our fiftieth year. My greatest hope is that, 50 years from now, we'll look back and have accomplished our goals and much, much more."

"NIH feels a deep privilege in hosting the credit union," said Raub. "It is a first class institution whose responsiveness is second to none."

Representatives of the credit union's two off-campus outposts—Suburban Hospital and Sibley Memorial Hospital—were also on hand at the catered affair, which transformed into an open house for employees once the speeches ended. Guests received commemorative coffee mugs and key rings emblazoned with the NIH FCU's new emblem—a growing tree.

"The credit union members are your tree's roots," observed Jepsen, who served in the Senate from 1979 to 1985. "The credit union's people-before-dollars philosophy comes to the fore nowadays. We are the

financial front porch and picket fences of our communities."

"The NIH credit union has stood as a beacon of hope for financial needs, just as NIH has stood as a beacon of hope for those with physical needs," said Kenneth Robinson, president of the National Association of Federal Credit Union.

NIH veteran Diehl, a native of McGaheysville, Va., who remains active as a minister and chemist, regaled the audience with tales of NIH a half century ago.

"I'm just a farm boy," he cautioned before embarking on a rambling tale of how he developed more than 500 new compounds during his NIH career, including a new process for preparing 2-deoxyribose, a sugar found in DNA. Diehl was honored in 1958 for work that supported development of the Salk polio virus vaccine.

"I'm working on cures for cancer and arthritis right now," he continued.

In somewhat less exuberant tones, Dr. Harley G. Sheffield, who has been affiliated with NIH FCU since 1969, observed that the credit union has grown slowly and not without difficulties.

"There's no royal road to anywhere," he said. "Progress is made little by little. The NIH credit union has come a long way, but the very best in it remains unchanged."

The NIH R&W Theatre Group entertained the gathering with songs from 1940 and a topical tune they wrote for the occasion called "Dear Creditors."

If your present address differs from that shown on the address label, please send your new address to office, 9101 Old Georgetown Rd., Bethesda, MD 20814.

Members (continued from p. 11)

Dr. Eugene L. Speck, a research associate at NINDS from 1970 to 1972, is an infectious diseases specialist with Infectious Diseases Consultants and an assistant professor of medicine at the University of Nevada School of Medicine. He is also chief of Infectious Diseases at the University Medical Center.

Dr. Nancy Touchette, a senior staff fellow at NCI, has joined *The Journal of NIH Research* as a writer. She was a postdoctoral fellow in the laboratory of R. David Cole at the University of California at Berkeley, and she received a doctoral degree in chemistry from Pennsylvania State University.

Dr. Rodney H. Withers, who was at NCI in the Laboratory of Physiology, Section of Radiobiology from 1966 until 1968, writes: "I returned to Australia to be Director of the Institute of Oncology at University of New South Wales at the Prince of Wales Hospital—after 9 years at UCLA and 12 years at M.D. Anderson before that."

Dr. James B. Wyngaarden, formerly the director of NIH, 1982-1989, left his position as associate director for life sciences in the White House Office of Science and Technology Policy at the end of June. In July he began his new job at the National Academy of Sciences where he has been elected to serve as the organization's foreign secretary.

Dr. Marvin Zelen, who was with the Biometry Branch at NCI from 1963 until 1967, writes that he is "stepping down after 10 years as Chairman of the Department of Biostatistics at Harvard University School of Public Health."

Europe (continued from p. 13)

"The U.S.S.R. is very different from East European countries," she said, citing primarily the lengths of time the countries have spent under similar restrictive political rules. "Seventy years is much, much different than 40 years.

"I hope that in a few years, Eastern Europe will be totally independent of Soviet power," she said, pointing out the long, uphill battle of complete economic freedom ahead for Eastern Europe.

"Of course, there are economic problems, but I think countries like South Korea can set a good example of how to use Western money and cheap labor to take care of huge debts and economic crisis in Eastern Europe.

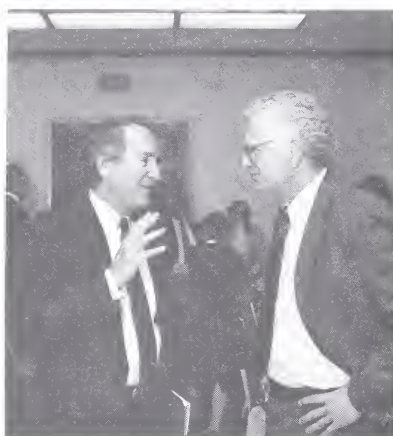
"In the U.S.S.R. there are many negative factors, though. One of them is popular chauvinism, which may be used by conservatives to undermine the democratization in the Soviet Union."

In 1988, the Soviet Union allowed fewer than five scientists to visit NIH for extended periods. In addition, fewer than five Soviet guest researchers studied in NIH labs. With the most recent announcement by the Soviet Union of removal of the Communist party from monopolistic power in the country, however, it is difficult not to feel optimistic.

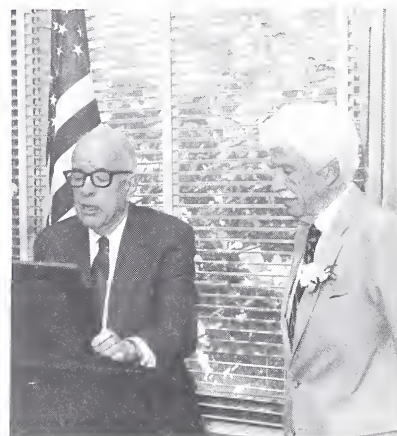
Fogarty's Alexandra Stepanian, International Coordination and Liaison Program officer for the Soviet Union, Eastern Europe and East Asia, reminded, "It is important to note that even when relations between the U.S. and the Soviet Union were strained, cooperation in the health sciences has continued uninterrupted since 1972."

Schambra predicted, "In the past, in the early days of the two countries' rapprochement, biomedical science played a very important part and I think it will continue to be an expanding area of mutual interest."

Congressional Breakfast Marks NIDDK's 40th Anniversary



Senator Tom Harkin (l), chairman of the Subcommittee on Labor, Health and Human Services, Education and Related Agencies, Committee of Appropriations, discusses his concerns for the biomedical research effort in the U.S. with Dr. Phillip Gorden, Director of NIDDK, at the congressional breakfast marking the 40th anniversary of NIDDK.



Dr. J. Edward Rall (r), Deputy Director for Intramural Research, NIH, was presented the NIDDK Distinguished Scientist Award by Dr. Herbert Tabor, Chief of the Laboratory of Biochemical Pharmacology, NIDDK, in recognition of his long service to NIH and to NIDDK, as its Director of Intramural Research from 1962 to 1983.



Dr. James B. Wyngaarden (l) is welcomed by Dr. William N. Kelley, dean of the school of medicine, University of Pennsylvania Medical School. Wyngaarden, an NIDDK alumnus, was honored with the presentation of the NIDDK Distinguished Scientist Award for his contributions as director of NIH from 1982 to 1989. (Photos: Ernie Branson)

CALENDAR

JUNE—AUGUST

An exhibit titled "The Emergence of Experimental Embryology in the United States" is on display in the NLM front lobby (Bldg. 38 on the NIH campus) through Aug. 31. For information call (301) 496-5405.

SEPTEMBER

Wednesday, September 26
The DeWitt Stetten, Jr. Museum of Medical Research will open a new exhibit entitled "Computers in Medical Research." It will be located in the Clinical Center, Building 10, and will be lighted from 9:00 a.m. to 9:00 p.m. daily. Admission is free. Prepared in cooperation with DCRT, NLM, and the Clinical Center, the exhibit will explore the role of computers in the biomedical research laboratory, in patient care, and in the dissemination of biomedical information. For information, contact the museum's curator, Dr. Victoria A. Harden, (301) 496-6610.

OCTOBER—MARCH

The Foundation for Advanced Education in the Sciences will present its 1990-1991 Chamber Music Series:

October 14, 1990
CANINO BALLISTA, duo piano

October 28, 1990
VIKTORIA MULLOVA, violinist

November 18, 1990
PETER SERKIN, pianist

December 2, 1990
GOLUB-KAPLAN-CARR, piano trio

January 20, 1991
RIDGE STRING QUARTET

February 10, 1991
HERMANN PREGY, baritone

March 17, 1991
MICHALÁ PETRI, recorder

April 7, 1991
HEINZ HOLLIGER, oboe

The concerts are all held on Sundays at 4 p.m. in Masur Auditorium, Bldg. 10. For information about tickets call (301) 496-7976.

NIHAA EVENTS

SEPTEMBER

Monday, September 10 and Tuesday, September 11
Annual Research Day proceedings. The first morning of Research Day (Monday, September 10) has been

set aside for a special NIH Alumni Symposium to honor distinguished former NIH scientists. This year's program, *Leukemia, 25 Years Later*, will honor Drs. Emil Frei and Emil Freireich, and it will be held from 8:30 to 2:00 p.m. in Masur Auditorium. Detailed information about the program and other Research Day activities will be mailed during the summer.

OCTOBER

Friday, October 19
A reception at the Japanese Embassy, 2520 Massachusetts Ave. NW, from 5:00 to 7:30 p.m.

For more information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.



President and Mrs. Bush were on campus June 21 for the opening of the Children's Inn at NIH, a model facility for family-centered care with room for as many as 36 families each with a child enrolled in a pediatric study. Here Bush chats with Andreano Johnson (r) of Madison Heights, Va. Look for more inn details in the next issue of *Update*. (Photo: John Crawford)

NIH Retrospectives



SPRING 1950

Dr. Ralph W. Wyckoff, Chief of the Section of Molecular Biophysics, Experimental Biology and Medicine Institute, reported that filterable viruses have been seen for the first time in their habitat, tissue cells. Working with the electron microscope and sliced tissue sections sometimes less than 300,000th of an inch thick, Dr. Wyckoff has seen and photographed viruses in cells ... The Civil Service Commission recently announced that the NIH had been granted ten new "super-grade" GS-16s. The salary, \$11,200 ... The Bank of Bethesda opened a branch at NIH with Mrs. Luke I. Wilson making the first deposit. Mrs. Wilson and her husband donated to the federal government their estate which became the permanent home of NIH ... Drs. James O. Davis, Ernest Cotlove, and Thomas J. Kennedy Jr., were appointed to the Section on Kidney and Electrolytic Metabolism of the Research Branch of the National Heart Institute ... Miss Margaret Doonan, for 30 years the librarian for the NIH-PHS Library, retired.



SPRING 1960

Deputy Assistant Secretary of Labor Seymour L. Wolfbein predicted that by 1970 one third of the work force will be made up of women ...

Mrs. Helen Woodward Wilson, the widow of Luke I. Wilson, died on April 7, 1960 ... Ten tons of cholera research laboratory equipment and supplies were shipped to Dacca, East Pakistan by NIH ... At the request of the World Health Organization, Dr. G. Robert Coatney, Chief of NIAID's Laboratory of Parasite Chemotherapy, has embarked on a tour of three African countries to evaluate WHO's projects on malaria control ... The King of Thailand scheduled to dedicate the new Division of Biologics Standards building on June 30, 1960 ... Dr. Robert Huebner, Chief of the Laboratory of Infectious Diseases, NIAID, was elected to The National Academy of Sciences for his original research in the field of virology. He is the seventh person from NIH to be so honored. Other NAS members now on the staff at NIH include Drs. Joseph E. Smadel, Charles Armstrong and Kenneth S. Cole.



SPRING 1970

Solutions to the mysteries of the life cycle of toxoplasma announced in almost simultaneously released reports from parasitologists at NIAID, the University of Kansas and from four European scientists ... The Legislature of the Territory of Guam has commended the NINDS for "its extremely important research work in the debilitating and widely prevalent Guam diseases of amyotrophic lateral sclerosis and Parkinsonism-dementia" ... Roskey Jennings was honored for 40 years of working at NIH ... In April the Extramural Programs of NIEHS moved to Research Triangle

Park, N.C., joining the Institute's Intramural Programs and direct operations ... E. Kenneth Stabler, editor of the *NIH Record* from 1960 to 1967, died on May 7 ... Ceremonies were held in the Clinical Center on May 10 dedicating the portrait of Dr. Jack Masur. The painting was placed in the entrance to the auditorium named after him ... Storm Whaley, vice president for Health Sciences and director of the University of Arkansas Medical Center in Little Rock has been named to the newly established position of Associate Director for Communications. He will assume his duties at NIH in July.

The NIH Record

U. S. Department of Health, Education, and Welfare September 18, 1970 Vol. XXXI No. 39 National Institutes of Health

SPRING 1980

On April 22 King Baudouin and Queen Fabiola of Belgium visited NIH, toured the campus and attended research briefings given by NIH scientists ... With the establishment of the Department of Education on May 4, 1980, the Department of Health, Education, and Welfare (HEW) officially became the Department of Health and Human Services (HHS) ... Volcanic ash released into the atmosphere by the eruption of Washington State's Mount St. Helens volcano on Sunday, May 18 forced the temporary closing of NIAID's Rocky Mountain Laboratory in Hamilton, Montana, located 470 air miles away ... The National Library of Medicine's new \$23 million biomedical communications facility—The Lister Hill National Center for Biomedical Communications—was dedicated on May 22.

Attention

NIHAA wants to hear from its members. Please type or print legibly your note for a future issue and mail it to:

Harriet R. Greenwald, Editor
NIHAA Update
9101 Old Georgetown Rd.
Bethesda, MD 20814

If you did not receive the first, second or third issue of NIHAA Update and would like a copy, please notify us.

Name

Home address

Home phone

News. Include dates/position at NIH.

News About NIH Alumni Association Activities

In March, the board of directors elected officers for 1990-1991. They are president, Dr. Gordon D. Wallace; vice president, Dr. John F. Sherman; and secretary-treasurer, Calvin B. Baldwin, Jr.

The association has had a busy schedule of activities this past spring. Two "mixers" were held at meetings in Washington, D.C. The first was on May 6, at the Clinical Meetings and the second on May 24, at the AACR meeting. They were well attended by a combination of NIH personnel and alumni members. The local chapter of NIHAA held its spring meeting on June 18, with Dr. James O. Mason, HHS assistant secretary for health, as the featured speaker. He spoke about the "Advisory Committee Recommendations and the Status of the Search for the

NIH Director." After the talk, members were invited to tour the Children's Inn at NIH.

On September 10 and 11, NIH will hold its annual Research Day Proceedings. Alumni are cordially invited to attend. As part of the Research Day activities, the scientific directors of NIH have set aside Monday the 10th for a special NIH Alumni Symposium to honor distinguished former NIH scientists. This year's program will honor Dr. Emil Frei and Dr. Emil Freireich, pioneers in cancer chemotherapy. They spent ten years at the NCI (1955-1965) and were largely responsible for establishing the principles for curative therapy of leukemia. A symposium will be held in their honor that will address the current status and future prospects for research in the etiology, biology

and therapy of leukemia.

At the conclusion of the symposium, Drs. Frei and Freireich will receive the NIH Distinguished Alumni Award for 1990. A detailed announcement of the program and other related activities will be mailed to the NIHAA members in the summer.

On Friday, October 19, the Washington Chapter of NIHAA will host a reception at the Japanese Embassy. Invitations and details about the event will be mailed in September.

The response to *Update* continues to be enthusiastic, but we still need more information from our members. We invite you to send in the clip-out form above with your news and views. Please include comments and suggestions both for the association and the newsletter.



NIHAA UPDATE

If You Are Not Yet A Member Of The NIHAA [Clip and mail]

NIHAA Office
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If you joined NIHAA before
Dec. 1989, and have not
returned your dues renewal
notice, please do so as soon
as possible.

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

(Title)	(Organization)
---------	----------------

from _____ to _____ My membership dues of \$ _____

(Years)

are enclosed payable to FAES/NIHAA.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment If applicable: _____

Mailing Address: _____

City, State, and Zip Code: _____

Telephone: _____

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are welcome.
Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at NIH.
Present NIH staff are invited to join as associate members.

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Scientist, Administrator, Humanist

DeWitt Stetten Dies; Shaped NIH Research for Over Three Decades

Dr. DeWitt Stetten Jr., NIH deputy director for science, emeritus, and senior scientific advisor to the NIH director, died Aug. 28 of congestive heart failure at Fernwood Nursing Center in Bethesda.

Born May 31, 1909, in New York City, Stetten, known affectionately to his friends as "Hans," was the second child of a prominent surgeon. As a boy he attended Horace Mann School, an experimental school associated with Teacher's College of Columbia University. In 1930, he received his A.B. degree magna cum laude from Harvard College and was named a member of Phi Beta Kappa. Although his first love was biochemistry, he was persuaded by his Harvard tutor and mentor, Frank Fremont-Smith, to attend medical school before embarking on a laboratory research career.

(See *Stetten* p. 30)



Dr. DeWitt Stetten Jr.

First Human Gene Therapy Trial Debuts at NIH

By Carla Garnett

After more than 3 years awaiting federal approval, the first human gene therapy clinical trial got under way in September at the Clinical Center.

"We feel that gene therapy is potentially a major new therapeutic option that should have significant effects in the next century," announced Dr. W. French Anderson, chief of NHLBI's Molecular Hematology Branch and one of the trial's three principal investigators.

"We also feel that as important as anything else is to get started," he said.

"The possibility of coming up with a

therapy that really can fundamentally help is very exciting," echoed Dr. R. Michael Blaese, chief of the cellular immunology section of NCI's Metabolism Branch and another principal investigator.

"Everything is sort of slow steps," he continued. "I think this is a small step as well but it's a very exciting one."

The treatment, historic in its implications but comparatively simple in its procedure, began mid-day Sept. 14 in the pediatric intensive care unit.

(See *Gene Therapy* p. 32)

Federal Agencies Ranked

NIH Work Force Rates Tops in Survey

Only national security is nearer and dearer to the hearts of former federal executives than health research and money, say members of the Washington-based Council for Excellence in Government.

NIH tied with the Federal Reserve as the second most respected federal agency, according to 250 former government executives and council members who recently completed a *Fortune* magazine survey.

The National Security Council was rated first. NIH finished ahead of such contenders as the Council on Economic Affairs (fourth), the Office of the Treasury Secretary (fifth) as well as the CIA and the FBI (eighth and ninth).

Almost 90 government agencies were rated on four criteria: quality of management; quality of work force; quality of service; and return on the tax dollar.

Survey respondents, all of whom are now in the private sector, were asked to

rank the agencies based on personal experience with the agency or perception of the agency's competence at accomplishing its mission.

"The top-rated agencies are all older, more established agencies for which a political consensus exists about their

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Work Force (continued from p. 1) mission," said Mark A. Abramson, council president. "They are generally highly visible, and they all have a reputation for stability of leadership and for seeking and retaining excellent people."

Least respected agencies include the Bureau of Indian Affairs, Small Business Administration, the Indian Health Service, the Department of Education, and the Department of Housing and Urban Development.

The bottom-ranked agencies "have suffered from declining resources and high turnover of staff, often because they are politically controversial," said Abramson. "They tend to be newer organizations whose mission is less clear and for whom there is not a national political consensus about their worth."

The three top-rated agencies—the "superstars"—were all rated first on one or more of the judging criteria. The Federal Reserve was rated tops for quality of management and quality of service; the NSC tops for return on tax dollar; and the NSC and NIH shared the top ranking for quality of work force.

Ranked in the next-to-highest category was NIH's cousin, the Centers for Disease Control.

According to a spokesman, the council did not give overall ratings to large departments whose autonomous units had high name recognition, such as the Department of Health and Human Services. Instead it rated a number of major agencies within the large departments. In the case of HHS, this led to a range of ratings, with "best" for NIH and CDC, "good" for the Food and Drug Administration, "fair" for the Alcohol, Drug Abuse and Mental Health Administration, and "needs improvement" for the Indian Health Service.

Also excluded from the survey were such large central management agencies as the General Services Administration and the Office of Personnel

Management; the smallest agencies were similarly unrated.

Highlights of the survey's findings are reported in the Nov. 19 edition of *Fortune*.

NLM Calendar Available Through Friends

A colorful 1991 National Library of Medicine wall calendar—featuring twelve illustrations, mostly drawn from the library's historical collections—is now available from the Friends of the National Library of Medicine, 1527 Wisconsin Ave., N.W., Washington, DC 20007. The price is \$10 per calendar.



"The Alchemist," a 17th century etching from NLM's History of Medicine collection, is one of the illustrations in the 1991 NLM calendar, offered by the Friends of the NLM.

dar (\$8 for members of the Friends, staff and alumni of the NIH/NLM). Please add \$2 for shipping and handling; if ordering more than one calendar, add an additional \$1 per calendar.

Among the illustrations in the calendar, most of which are in full color, are a 1514 engraving on melancholy by Albrecht Durer, an 1825 etching caricaturing indigestion, an 1887 lithograph of Louis Pasteur, and a 1987 AIDS conference poster. Important anniversary dates in medical history are given for each month, as well as interesting anecdotes and quotations related to the themes represented in the pictures.

Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit materials.

Editor's Note

The NIHAA Update, is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

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NIHAA Forum**A Defense of the Human Genome Project**

By Dr. James Watson and
Dr. Norton Zinder

The following is a reprint of a letter sent to the New York Times by James D. Watson, director of the human genome project and Norton Zinder, John D. Rockefeller, Jr. Professor, Rockefeller University, and Chairman NIH Program Advisory Committee on the Human Genome.

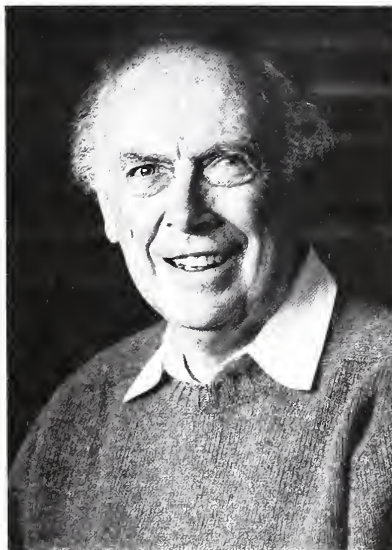
Your paper has recently published opinions critical of so-called "big science," including the Human Genome Project. The project is nothing like the "big science" research and development initiatives with which it is continually compared.

First, the Human Genome Project is not a large piece of hardware located in a single place to be operated by a single group. More than a hundred laboratories in every corner of the continent will participate in the project. Most genome project laboratories will contain about the same number of workers as any typical biomedical research lab.

Second, the Human Genome Project cannot fail. Each step we take en route to our ultimate goals will make it easier for scientists to find genes. Like the system of interstate highways spanning our country, the map of the human genome will be completed stretch by stretch, beginning now.

Our first major goal, to construct a fully connected system of maps of each of the human chromosomes, will guide researchers more quickly and cheaply through the labyrinth of human DNA to the genes they are so eager to find. Biomedical investigation will flow along any part of those pathways as soon as they are complete, well before the entire system is mapped.

Thousands of human diseases have their roots in malfunctioning genes, and many others have strong genetic co-factors. Despite exciting recent successes, tracking down genes is now a very difficult task. Using current chromosome maps, gene hunts are long, arduous, and enormously expensive. Just ask the people who have done it. Discovery of the gene for cystic fibrosis—an "easy" find according to those scientists—took seven years at a very high cost. Sadly and more typically, the eight-year search for the devastating Huntington's



Dr. James D. Watson

disease gene has yet to bring forth the villain, despite the vigorous efforts of a cadre of superb scientists. For diseases resulting from the interactions of more than one gene, discovering the underlying genetic factors will be impossible without a detailed map.

Researchers studying a roundworm have mapped 95 percent of its genome. Such a map has reduced the time it

takes to find a gene in that animal from over a year to merely weeks. It is possible today to construct similar maps of human chromosomes. A central goal of the Human Genome Project is to deliver those human maps over the next five years to the research community so scientists can get on with the study of how genes work, in both health and disease.

NIH invests in the search for genes because we believe having a gene in hand is the first step in the characterization of molecular defects that result in disease. Progress in understanding the causes of cancer, for example, has been pushed forward tremendously by the discovery of cancer genes. We must now make deliberate efforts to surmount the next technological hurdles that today keep scientists from understanding the molecular essence of other tragic and devastating illnesses, such as schizophrenia, Alzheimer's disease, alcoholism, and manic depression.

Once genes are found, their alterations and defects are analyzed by DNA sequencing to give us their specific structures. Current technology is still too slow and costly to sequence even the amount of DNA contained in a small piece of one human chromosome. To fulfill its ultimate goal of sequencing the three billion subunits of human DNA, the Human Genome Project must stimulate development of faster and cheaper sequencing technologies. Large-scale sequencing of the human genome is not scheduled to begin until the cost of sequencing is reduced significantly, to less than \$1 per subunit.

More efficient sequencing technologies will make laboratory life infinitely easier for the many biomedical researchers longing to know the secrets locked away in a lengthy DNA strand they painstakingly isolated. The ability to sequence DNA quickly and cheaply will also provide the technological

(See Genome p. 4)

Genome (continued from p. 3)

basis for a new era in the laboratory. The Human Genome Project will greatly accelerate the speed at which important "natural" drugs, such as the already available tissue plasminogen activator, erythropoietin, and interferon become available to patients.

The concept of a Human Genome Project received several rigorous reviews by independent scientific panels. Each of these committees, which contained members initially opposed to the project, concluded that such a project is both feasible and important to the advancement of U.S. science, industry, and public health.



Dr. Norton Zinder

The amount of money we ask to accomplish the task, \$200 million a year, is commensurate with the genome project's role in the fight against many serious health problems. The contributions the Human Genome Project will make to the full range of biomedical research the NIH supports make it an economical and worthwhile investment.

Americans have always and proudly dared to envision great things. That is the only way we will accomplish them. The Human Genome Project celebrates not only the wonder of our genetic endowment but also the grandness of the human spirit.

NIH Creates Office of Education, Fordis Named Director

The next decade offers unparalleled opportunity for scientific discovery. Yet in the face of such possibilities, there has been a precipitous decline in the number of young Americans who are training for careers in biomedical research. To address this problem, NIH has created a new Office of Education that is responsible for the development and coordination of a variety of programs and initiatives that will be part of a strategy designed to reverse this trend.

In addition to providing a focal point for postdoctoral recruitment efforts across institute lines, the Office of Education plans to establish a pipeline of opportunities for young people at varying stages of educational development. These opportunities will include, but not be limited to, the Clinical and Research Associates Program, the Clinical Electives and Summer Research Fellowship Programs, and the NIH/Howard Hughes Medical Institute High School Summer Research Program.

In collaboration with the Educational Commission on Foreign Medical Graduates, the office has developed the NIH/International Medical Scholars Program, which will permit foreign physicians to come to NIH for training in clinical and basic research.

The office will also assume responsibility for the administration of all NIH continuing medical education programs, as well as the continuing accreditation of graduate medical education programs.

Dr. Michael Fordis, a former NHLBI and NCI researcher, has been named director of the office by Dr. Joseph E. Rall, NIH deputy director for intramural research.



Dr. Michael Fordis

A native of California, Fordis earned his B.S. at the University of California, Irvine; his M.D. at the University of California School of Medicine in San Diego, where he also completed his residency in internal medicine. In 1977, Fordis joined the Hypertension-Endocrine Branch of NHLBI, where he studied the biochemistry of vasoactive peptides. With a growing interest in the regulation of development, he joined the Laboratory of Chemical Biology in 1981 and investigated the developmental expression of human globin genes. Before accepting his current position, he continued his studies in the Laboratory of Molecular Biology, NCI, where his work focused on genes that suppress cellular proliferation.

The office is located in Bldg. 10, Rm. 1C129 and the telephone number is (301) 496-2427.

NIH Research Festivities Offer Something for All

By Anne Barber

"A day just for ourselves," said Dr. Joseph E. Rall, NIH's deputy director for intramural research.

"Like a family reunion," said Dr. Philip S. Chen Jr., NIH's associate director for intramural affairs. "It is a great thing for getting together NIH's intramural program. We are interested in bringing together scientists who now do not have much contact."

Rall and Chen are talking about Research Festival. Begun 4 years ago, it was expanded this year to include an extra day of activities. This year there were 5 symposia, 35 workshops and 383 posters displayed during the 2 days of activities—Sept. 10 and 11.

For the first time, a Distinguished Alumni Award was presented. The recipients were Drs. Emil Frei III and Emil Freireich who developed the first successful cure for childhood cancer using chemotherapy.

NCI's director for the Division of Cancer Treatment, Dr. Bruce Chabner, chairman of the symposium honoring Frei and Freireich, said the idea for having a Distinguished Alumni Award yearly belonged to Dr. Abner Notkins and the NIH Alumni Association. Notkins serves as chairman of the organizing committee for the association.

"NCI had the privilege to bestow the first award," said Chabner, "and we chose two of our most distinguished alumni. They were here 35 years ago and many of us have profited from their research."

"I was one of the last trainees of these two gentlemen during their last years at NIH in 1960," said former NCI director Dr. Vincent DeVita, now of Memorial Sloan-Kettering. "Cancer was considered a killer and chemotherapy was talked about despairingly because of the side effects and tolerance.



Dr. Emil J. Freireich (l) and Dr. Emil Frei III were winners of the NIH 1990 Distinguished Alumni Award. In a speech prepared for the presentation, Dr. Samuel Broder, NCI director, characterized them both "as practicing both pure and practical science in the service of saving lives. I see their lives as serving the highest of ends. I see them as a model of the new clinician scientist so necessary to the continual prevention, eradication and control of cancer."

"The main issue of the sixties was whether or not cancer chemotherapy could cure cancer. These two doctors established the dose response and toxic effects to come up with the combinations used here in the fifties. Their aim was curing leukemia. Their idea was controversial but stimulating."

Continued DeVita, "Their model was childhood leukemia. I remember being quite stunned when I saw their first remission from chemotherapy. The general reaction was indignant rejection, opposition, then cautious adoption.

"Frei taught me not to believe anything I was taught unless I saw the proof," he continued. "There is a quote I leave to all trainees. I don't know who said it but the quote is: 'Do not follow where the paths may lead, go instead where there is no path and leave a trail.'"

Dr. E. Donnell Thomas of the Fred Hutchinson Cancer Center and a member of its marrow transplant team stated that in the 1950's there was no corrective therapy for leukemia. "The first bone marrow paper was published in 1957 and transplantation followed in 1959. Now platelet transfusions have become routine." Thomas recently shared the 1990 Nobel Prize for Medicine or Physiology.

Freireich, presently at the M.D. Anderson Cancer Center, said in his acceptance speech, "I spent 10 years at the Clinical Center and the things we (Frei included) learned there have guided us through the past 25 years.

"We were bold enough to propose a cure. It proved to be rational and I was lucky I got to see this proven during the past 25 years. Normally, the problem in this field is that we don't live long

(See *Festival* p. 6)

Festival (continued from p. 5)

enough to see what the long-term results are.

"Now we have to work with genetics. Cellular genetics is just overpowering and molecular genetics is now exploding. I believe the next 25 years will be more exciting and I hope I'll be here to talk about them," Freireich concluded.

When Frei arrived at the Clinical Center in 1955, his goal was research. "We did new things with the idea that we did not bring patients into the Clinical Center to treat them in routine fashion," he said.

"We had new techniques, we developed novel approaches from basic and clinical sciences. Today, we combine both novel and traditional approaches.

"We need to give the investigator resources and a chance to go with his ideas," Frei continued. "We need to have primary goals relating to cancer research and the freedom and resources to reach them. This is what should be done at a place like the National Institutes of Health."

Rall, who gave the opening remarks at the AIDS symposium later the same day, received a photograph of the NIH campus in honor of his 70th birthday being celebrated this year. Dr. John Gallin, chairman of the Research Festival '90 organizing committee and director of NIAID's Division of Intramural Research, presented the framed photograph. "In keeping with the spirit of the festival, we are honoring someone who has been at NIH for more than 35 years and helped us establish this Research Day." The plaque was signed by laboratory chiefs and directors.

Dr. Samuel Broder, director of NCI, emphasized how important it is that NIH have a research festival for the intramural program. "It proves that laboratory research can make a difference and lead to therapies that help keep people alive," he said.



Dr. William P. Hayes (l) of NICHD explains his poster titled, "Correlated onset of POMC mRNA expression inside and outside the brain: Evidence for embryonic brain-pituitary interactions" to Dr. James L. Olds, NINDS.

Dr. Robert Gallo, chief of NCI's Laboratory of Tumor Cell Biology and one of the speakers at the AIDS symposium, discussed recent advances in the study of Kaposi's sarcoma.

There were two symposia held on Monday and three on Tuesday; all were filled to capacity with standing and sometimes sitting-on-the-floor room only. The symposium on "Gene Transfer and the Potential for Genetic Therapy" held in Wilson Hall was particularly well attended with Dr. Arthur Nienhuis, chief of NHLBI's Clinical Hematology Branch, serving as chairman.

Dr. David Dichek of NHLBI's Molecular Hematology Branch had hand written one of the slides used in his presentation. He joked that when he went to get the artists to do the slide, they had been placed on furlough.

NCI's Dr. R. Michael Blaese spoke on gene therapy for ADA deficiency, and Dr. Steven A. Rosenberg, chief of NCI's Surgery Branch, discussed gene therapy in the treatment of cancer. Dr. W. French Anderson, chief of NHLBI's Molecular Hematology Branch, spoke on the present and future use of gene therapy. Two of these physicians, Blaese and Anderson, 3 days later led the team that performed the world's first gene therapy on a 4-year-old girl with an immune system defect.

Attending several symposia was Dr. Michael Fordis, director of NIH's Office of Education, who said, "The scope of the research demonstrates that at NIH we have a successful marriage between basic science and application in clinical medicine."

The poster session was held in two tents with more than 380 posters displayed during the 2 days of activities. New exhibits were displayed daily with the exception of one poster that drew such a large audience that it was returned by popular demand. Titled, "Scientific Humor and the NIH Scientist," it was presented by Dr. Prince Arora of NIDDK's Laboratory of Neuroscience.

Arora studies how stress affects the immune system, so he thought his humorous poster would relieve some stress. "I just wanted to make them laugh," he said. Arora also presented a poster titled, "Opiate-induced inhibition of calcium flux in immune cells."

"There are just so many things to see and go to," said Bldg. 1's Chen, who paused at Arora's poster. "The festival offers an excess of good things to do."

Agreeing with that were crowds of young scientists trying to attend as many of the symposia and poster sessions as they could.

Dr. Yuan Jiangang, Laboratory of Chemical Biology, NIDDK, was one of those. A visiting associate from China who has been at NIH for 3 years, Jiangang said he had been to the AIDS symposia. While there was not a lot of new territory covered in it, he thought Research Festival was great.

Andrea Cooper, a Fogarty fellow from England who has worked in NIAID's Laboratory of Parasitic Diseases for the past year, said going to the workshops was good. "It is nice to get in touch with other people, have a look around and see what everybody is doing."

Dr. K. Shimoda, a visiting scientist from Japan, has been working for



Dr. John Gallin (I), chairman of this year's Research Festival, presented a photograph of NIH's campus to Dr. Joseph E. Rall in honor of Rall's 70th birthday. Rall serves as NIH's deputy director for intramural research.

NIMH's Laboratory of Biochemical Genetics at St. Elizabeths Hospital for 3 years and has presented a poster for the past 2. He said, "My interest is very limited so I am delighted to talk to anyone who is interested in my field. To find out there are a lot of collaborators out there is a very good thing. Very exciting. This is a big opportunity to discuss my work with top scientists."

Dr. Paul Levine of NCI's Environmental Epidemiology Branch was there with his poster, "The American Adult T-cell Leukemia/Lymphoma Registry (ATLR): Recent Observations." It was his first time exhibiting at the poster session. "It has been very worthwhile. I have been asked very provocative questions that I now have to find out the answers to," he said.

"Very interesting," said Dr. Antonella Farsetti, a Fogarty visiting fellow from Rome, about the poster session. Farsetti has been working in NIDDK's Clinical Endocrinology Branch for 1 year and plans to stay for one more. "I just follow what I'm interested in—thyroid hormone effect. It is always good to know what others are doing so that a door is not closed to you," she continued.

Dr. Reuben Siraganian from NIDR's Laboratory of Immunology, has been at NIH for 17 years and says "Research day, since it started, has been a very good addition to the NIH community."

Executive director and editor of the NIH Alumni Association's newsletter, *NIHAA Update*, Harriet Greenwald manned a booth both days. She reported that people were interested and that NIHAA had picked up some new members. "This is a good opportunity for us to let people at NIH know it (NIHAA) is not just for past employees but also for current employees. We now have more than 1,300 members throughout the U.S. with 450 of those members from the metropolitan area—including Baltimore, Washington, D.C., and Bethesda."

NIH will sponsor the Distinguished Alumni Award annually at Research Festival with the institutes rotating the sponsorship. Next year the National Heart, Lung, and Blood Institute will honor its distinguished alumni.

In 1991, Research Festival is scheduled for Sept. 23 and 24.



The NIH Distinguished Alumni Award is a replica of the statue "Healing Waters" by Azriel Awret, which is located near the escalator on the first floor of the Bldg. 10 clinic. It will be awarded each year to a distinguished alumni of NIH.



Among the guests at the NCI reception on Sunday, Sept. 9, honoring Drs. Frei and Freireich at the Mary Woodard Lasker Center were (from I) Dr. Alan Rabson, director of NCI's Division of Cancer Biology, Diagnosis and Centers; Dr. Harold L. Stewart; Dr. James A. Pittman Jr., Dean, University of Alabama School of Medicine; and Dr. Ruth Kirschstein, NIGMS director.

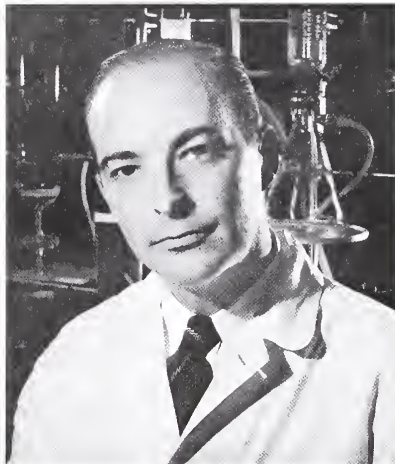
Leaving NIH, My Alma Mater

By Dr. Arthur Kornberg

Editor's Note: The following is an excerpt (pages 129-134) from Dr. Arthur Kornberg's book, For the Love of Enzymes. It crystallizes what many feel about NIH. It is reprinted by permission of Harvard University Press. (Copyright © 1989 by the President and the Fellows of Harvard College.) Kornberg was at NIH from 1942 to 1953 and the excerpt touches upon that period. In 1953 he became professor and chairman of the department of microbiology, Washington University. In 1959 he received a Nobel Prize for the laboratory synthesis of DNA. Currently, he is professor of biochemistry at Stanford University School of Medicine.

These orotic acid experiments were not the only crossroads I faced in 1953. I had to decide whether to continue at NIH or to veer westward to an academic life at Washington University in St. Louis, a city that would later become my "gateway to the (far) west." The decision to go west was based on two considerations, both of which turned out to be errors in judgment. First, I believed that the advent of the Clinical Center and the disease-oriented institutes would stifle basic research at NIH. And second, I believed that administrative life in a university would be more inspiring than life at NIH. As it turned out, research at NIH flourished, and I learned to my dismay that university administration and politics can indeed be burdensome.

When I came to NIH in the fall of 1942, Thomas Parran, who was then Surgeon General, told me that he wanted his Public Health Service officers less well-rounded but sharper at the edges. So an assignment to NIH promised to be more than the usual two-



Dr. Arthur Kornberg in 1950

year military service rotation. While I was still in uniform, NIH sponsored my training in biochemistry with Severo Ochoa in New York in 1946 and then with Carl and Gerty Cori in St. Louis. When I returned in 1947, the Institute had not changed much since the pre-war years. But the next year an "s" was added after Institute on the lettering of the Administrative Building architrave, signifying the creation of dental, heart, and other categorical institutes. The Research Grants Division was established, and planning for the Clinical Center was started.

Despite these harbingers of change, the five years between 1947 and 1952 were the most productive and gratifying in my scientific life. I recall a visit in 1950 from Gerty Cori. She lamented my being in a government laboratory. How could I persuade her that, in working without distraction on problems of my own choosing and digesting biochemistry publications every noon hour with my close friends and colleagues Bernie Horecker, Leon Heppel, and Herb Tabor (whose background and outlook were so like mine), I was enjoying an ideal academic environment.

Few people recognize the NIH acronym, nor do they know of the National Institutes of Health when it is spelled out for them. Yet the achievements of NIH defy exaggeration. It is the prime source of the most extraordinary revolution in biologic science. As expressed by Lewis Thomas: "All by itself, this magnificent institution stands as the most brilliant social invention of the twentieth century, anywhere." More than any university, NIH is my alma mater, and so I feel impelled to interrupt the narrative of this memoir to relate its origins, how it came—to quote Thomas again—"to do something unique, imaginative, useful and altogether right," and to explain why it has been and remains vital for the future of medical science.

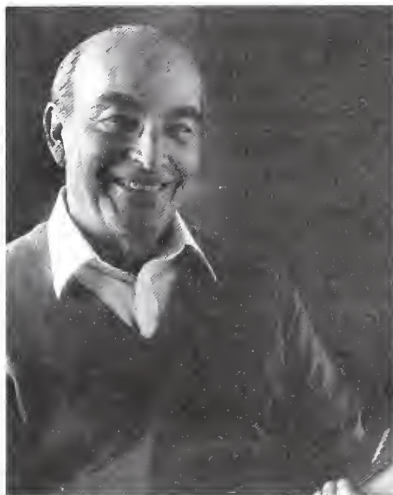
In 1987 we celebrated the centenaries of the founding of both the National Institutes of Health and the Pasteur Institute of Paris. Unlike the impressive building, staff, and worldwide recognition the Parisian institute enjoyed at its inception, NIH's beginning was humble in the extreme, a one-scientist, one-room laboratory in the attic of a Public Health Service Marine Hospital on Staten Island. From that start, NIH grew at a modest rate, occupying six small buildings in Bethesda when I arrived there in 1942. Then came the explosive expansion in the post-World War II decades which changed the face of medical science—13,000 people working in fifty buildings on a 300-acre site in Bethesda, along with 52,000 scientists at 1,600 institutions around the world, supported by an annual budget of near \$7 billion.

The colossal achievement for which NIH is justly famous is the innovation and maintenance of this vast program of grants for support of research and training in laboratories throughout the world. This program has been the single most important foundation for the biological revolution of the postwar

period. Guided initially by NIH scientists, the peer-review system for awarding grants and fellowships has administered many tens of billions of dollars with a scrupulous regard for quality and without a hint of chicanery. I know of no government program of this magnitude with such a magnificent record.

Sometimes overlooked is an achievement of NIH that prompted a large group of us to assemble in Bethesda in 1975 for the first alumni reunion. The talk I gave on that occasion tried to express that NIH, more than any college or university, had shaped our lives in the most profound way. In the untrammelled atmosphere of well-equipped, well-managed laboratories, young MDs and PhDs were introduced to professional science. Some remained at NIH, but well over 25,000 left to staff research, clinical, and administrative departments throughout the world. Today they populate and—as professors, chairmen, and deans—direct the finest university departments of basic medical science and clinical science. They are the clinicians in the leading hospitals, the research directors of the foremost pharmaceutical companies. They bring a novel outlook from their training in basic biological and chemical sciences to the lecture hall, laboratory, bedside, and factory. NIH is truly a National University of Health.

Looking back at this remarkable success, I am impressed, as an early participant, that this astonishing institution began its development without a plan or the leadership of any one individual. If a proper historical account is ever written, several names and some key policy decisions will be cited. Among the most significant people mentioned will be James A. Shannon, who directed NIH from 1955 to 1968, during which time a 15-fold increase in the budget (from \$81 million to \$1.2 billion) expanded the broad scientific base of medicine. Representative John E.



Dr. Arthur Kornberg in 1989

Fogarty, a bricklayer from Providence, Rhode Island, and J. Lister Hill, Senator from Alabama, were the patron saints in Congress who made this growth possible.

Among the policy decisions, I would emphasize these:

(1) to expend most of the budget extramurally in grants to universities and private research organizations,

(2) to award these grants to individuals, young and old, rather than to departments or institutions,

(3) to make these awards purely on scientific merit as judged by a panel of peers drawn from outside the government,

(4) to be unswayed by political or geographical considerations, national boundaries included,

(5) to support basic research, even within the purview of each of the categorical disease institutes (Heart, Cancer, and so on),

(6) to provide fellowships and grants for training of pre- and post-doctoral students, and

(7) to enlarge the intramural resources (in Bethesda) to accommodate a large expansion of research and postdoctoral training.

Perhaps the most significant of these

policies is grant support to individuals selected by peer review. In 1959 I was one of a group of five American biochemists (the others were Konrad E. Bloch, Herbert E. Carter, Bernard D. Davis, and the late Albert L. Lehninger) visiting the Soviet Union as part of an exchange program between our National Academy of Science and theirs. After a month of observing the management of research in the major Soviet universities and institutes, the Minister of Science asked us to compare the Soviet and American systems.

We said diplomatically: "Your system is different. You place authority for direction of research in the hands of a Director. In the United States, the individual scientist is in control. Immediately after completing his training, the young scientist applies for a research grant and is judged in competition with other applicants by a group of peers outside his institution, scientists within his special area of science. With the award of a grant, he becomes his own boss. His success or failure depends on what he accomplishes."

Our Russian host was puzzled: "It is your system that is different," he said. "Our system is the same as that practiced in all other countries, in Europe and Japan." He was right, and it is still true today that in most of the world, direction of research is vested in a relatively few senior people, whereas in the United States the bulk of research money in biology goes to thousands of individual investigators. Some complex problems may require the energies and disciplines of several individuals in a group effort. But far and away, award of research grants to individuals by peer review works best. Progress in science depends on the creative energies of the individual.

An aspect of the NIH grants program which deserves more notice is the award of grants for support of research

(See Kornberg p. 10)

Kornberg (continued from p. 9)

outside the United States. From the very outset after World War II, when funds were inadequate to support all the qualified and deserving American scientists, the decision was made to award grants to the most outstanding scientists and laboratories, regardless of where they were in the world. I am pleased in having had a role in that decision.

The advantages of this international spirit in promoting science proved to be far greater than we expected. In addition, we had not anticipated the enormous boost this altruism gave to medical science and technology in the United States. By rejuvenating European and Japanese scientists and laboratories—in effect a “mini-Marshall” plan for sciences comparable to the massive postwar Marshall plan for economic rehabilitation—we were able to enlist the vast reservoirs of talent on all three continents. In so doing, knowledge was obtained which we could all share and thereby generate the most remarkable advance in medical science the world has ever known.

As a consequence of the rebirth of science centers in Europe and Japan, a tide of gifted students and senior investigators flowed into the United States. We welcomed them, and many remained to enrich American universities, research institutes, and industries. At the NIH laboratories in Bethesda alone, many thousands of foreign scientists (over 3,000 from Japan alone) received postdoctoral training and became loyal alumni upon returning to their native countries. These developments also helped to create markets for American technology and pharmaceutical products and to establish English as the international language of science.

Were the NIH record to be described for publication as an experiment in research administration, an impartial reviewer, even in this social area of



Dr. Arthur Kornberg and Dr. DeWitt Stetten Jr. in 1959

science, might well question whether other factors might have been responsible for the good result. Such an experimental control does in fact exist in the support program of agricultural science in the United States during the same postwar period. The Department of Agriculture retained all authority within its own bureaucracy and limited research activity to its few established regional laboratories around the country. There were no grants to universities and private institutes. With this old-fashioned system of management, the knowledge base for agriculture remained stagnant. Little was learned about the basic biochemistry and genetics of plants and farm animals. Only recently, with the introduction of recombinant DNA technology, has there finally been a slight awakening of interest and activity in basic agricultural science.

The Alumni reunion of 1975 was held not for sentimental reasons, nor to publicize past and present achievements, but rather to express the concern of alumni for the future of NIH. Despite its superb record and its dedication to science and the conquest of human disease, NIH had become and remains the

target of budget cutters and antiscience forces. As with all worthwhile things, the struggle for survival is never won. This is even more true of support for science than of support for other institutions in society.

The difficulty with research support in our society, I have come to realize, is the failure to understand the nature and importance of basic research. This failure can be seen among members of the lay public, political leaders, physicians, and even scientists themselves. Most people are not prepared for the long time-scale of basic research and the need for a critical mass of collective effort. Fragments of knowledge unwelcomed and unexploited are lost, as were Gregor Mendel's basic genetic discoveries. The vast majority of legislators cannot accept the seeming irrelevance of basic research. Were there a record of research grants in the Stone Age, it would likely show that major grants were awarded for proposals to build better stone axes and that critics of the time ridiculed a tiny grant to someone fooling around with bronze and iron. People do not realize that when it comes to arguing their case for more funding, scientists who do basic

research are the least articulate, least organized, and least temperamentally equipped to justify what they are doing. In a society where selling is so important, where the medium is the message, these handicaps can spell extinction.

NIH Grantees Win Nobel Prizes

Dr. Elias Corey Wins in Chemistry

Dr. Elias J. Corey of Harvard University, who has been a grantee of the National Institute of General Medical Sciences for 20 years, is the winner of the 1990 Nobel Prize in Chemistry. Corey was cited for "his development of the theory and methodology of organic synthesis." For many years, his laboratory has been outstandingly successful in the synthesis of a varied array of drugs and other complex molecules of biological interest.

One of Corey's most recent achievements is the development of a family of totally synthetic enzymes that he calls "chemzymes." *Science* magazine has called these molecules "among the most intriguing innovations of the decade."

Chemzymes are small molecules that catalyze certain reactions quickly and in such a way that only the biologically effective product is made. Moreover, they are produced by "rational" molecular design—that is, Corey and his coworkers start out by understanding the chemical mechanisms involved in a particular reaction and then synthesize molecules with exactly the properties needed.

Conventional chemical synthesis of biologically active molecules results in a product containing molecules that are mirror images of each other—so called "right-handed" and "left-handed" molecules. A molecule of the wrong "handedness" is usually either useless or may even cause serious side effects.

Chemzymes, in contrast, make every one of their product molecules in the same orientation. This eliminates not only the waste of costly raw products at the beginning of a synthesis, but also eliminates the need to remove unwanted products of the wrong orientation at the end of the synthesis. The use of chemzymes will thus help synthetic chemists eliminate one of the most persistent roadblocks to efficient, cost-effective chemical synthesis.

NIGMS has also supported Corey for many years to develop sophisticated computer techniques with which chemists can work interactively to synthesize organic compounds. In addition, he recently received an NIGMS MERIT award, which provides for extended support to foster the continued research achievements of distinguished scientists.

Since 1962, NIGMS and four other NIH institutes—NCRR, NCI, NHLBI and NIAID—have awarded Corey 58 grants and contracts totaling \$12,059,338.

Drs. E. Donnell Thomas and Joseph E. Murray Win In Medicine or Physiology

Drs. E. Donnell Thomas and Joseph E. Murray, who shared the 1990 Nobel Prize in Medicine or Physiology for pioneering transplant therapy in humans, are both longtime NIH grantees. Thomas was on campus for Research Festival 1990 in September; he lectured on marrow transplant as a therapy for leukemia.

An investigator at the Fred Hutchinson Cancer Center in Seattle, Thomas, 70, has been an NIH grantee continuously since 1953. Institutes supporting his work have included NCI, NIAID and NIDDK. He has received grants from PHS totaling more than \$65 million in his career, said Robert F. Moore, head of DRG's special projects and presentation unit.

"Thomas was also a member of a

cancer study section in the late sixties and early seventies," Moore continued.

Murray, 71, a professor emeritus at Harvard Medical School, received funding of more than \$3 million during the period 1956-1973 from NHLBI and NIAID.

The work for which the scientists were honored began in the 1950's, at about the time they began winning NIH grants.

"We did recognize the two of them early on," Moore observed.

The researchers will share a prize of \$703,000.

Children's Inn Needs Weekend Volunteers

The response to the Children's Inn has been magnificent. However, there is one need for which the inn still lacks the necessary response—weekend coverage.

This contribution means arriving at the inn by 6 p.m. Friday and taking the place of the resident manager until 6 p.m. Sunday. Volunteers get a training orientation from Kate Higgins, resident manager, as well as written house instructions. In case of emergency, help from a staff person is just a beeper away.

There are several attractions to this service. Not only are you helping others in need, but you are also spending a quiet weekend in a beautiful country inn. Most patients' families are back at their own homes for the weekend and the atmosphere is quiet and relaxed. There just needs to be someone "in charge."

Since weekend volunteering means not leaving the property, it is much more fun to share this weekend with your spouse or a friend. That way, one of you can leave while someone is still in residence. If you are interested in helping out, call Pam Keller, (301) 496-5672.

'A Dream Come True'

Children's Inn Opens Amid Fanfare, Celebrations

By Rich McManus

Nine years of hoping, 2 years of building, and 4 years of high-level corporate and political lobbying culminated in the opening of the Children's Inn at NIH during the third week of June.

"Can you believe in Washington, D.C., that talk became a reality?" marveled congressional wife Debbie Dingell, who was master of ceremonies at the inn's June 21 ribbon cutting. Her husband John represents Michigan in Congress. One of several congressional wives whose energy and effort helped the 9-year dream come true, Mrs. Dingell presently serves as vice president of the Friends of the Children's Inn. "For once we've done something grand," she continued. "Ultimately, the inn will become a place of encouragement, empowerment and hope."

Festivities began Sunday, June 17 with an open house and reception for workers who built the inn, local community members and children. Mickey and Minnie Mouse were surprise guests at that affair. The celebrations ended the following Friday night at a dinner for bereaved families and friends of the inn's operations board.

In between, President and Mrs. Bush stopped by for 45 minutes on Thursday morning, more than 3,000 employees toured the 33,000-square-foot residence on Tuesday afternoon, and two separate ribbon-cuttings took place. This in addition to a lavish catered dinner for corporate donors Wednesday night put on by Merck & Co. Inc., which donated some \$3.7 million—the company's largest charitable gift ever—toward construction of the building.

"I've been so impressed by what I've learned about the unique concept of the Children's Inn," said Bush. "It's



Helping children cut the ribbon to open the Children's Inn at NIH on June 21 were (from l) Barbara Bush, Merck chief Dr. P. Roy Vagelos, President Bush, and HHS secretary Dr. Louis W. Sullivan.

an extraordinarily sensitive idea. I am very moved to be here to see how joyously your caring has been realized."

Intended to be a national model of family and child-centered care, the inn will provide room for up to 36 families that have children being treated on pediatric protocols at NIH. Some 60 percent of the residents will be cancer patients; the remainder will be here for a host of childhood illnesses including heart disease, osteogenesis imperfecta (OI, or brittle bone disease), epilepsy, asthma and arthritis.

Bush picked OI patient Brianne Schwantes of South Milwaukee as an example of the value of family-oriented care.

"Those who have treated her say that it is her family's depth of support that has given this child her life," he said. "The family is the key to everything."

Endorsing the first lady's recent admonition to the graduates of Wellesley College to put family first, even if it means sacrificing career goals, Bush said, "The lesson of the inn will show us all that the most important part of life is a very simple one—sharing a laugh, wiping a tear, listening to a loved one."

Bush singled out Dr. Philip Pizzo, chief of NCI's Pediatric Branch and so-called "godfather" of the inn, and Dr. P. Roy Vagelos, chairman and chief executive officer of Merck (and an NIH intramural scientist for more than a decade) as "people of exceptional goodness." He also thanked parents and nurses: "You have a special grace. You bring joy and strength to each other."

Reciting the Prayer of St. Francis of Assisi, Bush concluded, "God bless this place," then set about cutting the inn

ribbon with a crowd of children. Both the president and first lady then spent a good while greeting and hugging children and posing for pictures with parents.

Ceremonies earlier in the week were characterized by passion and joy.

"Acting NIH directors aren't allowed to have many happy occasions," joked Dr. William Raub at the Tuesday ceremony, "but believe me, I'm going to enjoy this week."

Emphasizing that the inn will enrich the research mission of NIH, Raub said, "The Children's Inn can't quite be a home in the literal sense, but it can come close."

"One day the inn will be a monument to the children whose participation in research projects allowed diseases to be cured," predicted Pizzo. "These cures we hope for will allow children to stay in the real inn—their homes."

HHS secretary Dr. Louis Sullivan, who was here Thursday with the president, called the inn "a wonder of the human spirit, a wonder of generosity and giving, and a wonder of caring and curing. It is the product of an inspired, intrepid and indomitable group of people."

Merck chief Vagelos said the inn was but one example of the "extraordinary advances that can result when private industry cooperates with public institutions."

Addressing the gathering Wednesday evening, Vagelos particularly credited Carmala Walgren, wife of Rep. Doug Walgren of Pennsylvania, with spearheading the inn's creation.

"Carmala was catalytic in getting this thing going," he said. "She is a very determined lady, a compassionate mother and a very good lawyer. She was very persuasive. Dogged, I would say."

Vagelos praised two other congressional wives for their "countless hours

and enormous effort"—Dingell and Chris Downey, wife of Rep. Thomas Downey of New York.

"Nature is not always just," observed Downey, "and we are here because we want justice done."

Walgren, who became involved in the Children's Inn early in 1986 when a neighbor fell ill with cancer and was treated here, called the inn "a work of love, an example of the importance Americans place on family."

When the first families to occupy the inn arrived on July 2, they were greeted by a structure that some 3,000 NIH employees had seen and admired during an open house that was tagged onto the traditional Camp Fantastic fundraising barbecue on June 19 (and which raised a record \$5,500 for the camp for children with cancer).

"We wanted this house to be an extension of the healing process for kids and families," said inn architect Bob Greenberg. "The objective is to encourage families to interact and to get out of their rooms."

Greenberg and building director Alan Kay of Alan I. Kay Companies wanted a structure that was unlike the imposing medical setting of the Clinical Center. They selected such noninstitutional materials as wood-shake shingles, cedar siding, stone, copper and glass, wood planter boxes, copper gutters and downspouts, and stone arches to get a residential feel in keeping with an upscale Bethesda neighborhood.

While the outside of the inn suits the 2-acre wooded site donated by NIH (and chosen from among several rustic campus parcels), the inside of the inn is the heart of the facility.

A magnificent community room dominates the entryway of the inn, anchored by a stone fireplace whose chimney, 8 feet in diameter, rises 2½ stories through a skylight in the roof. Pastel and earth-tone furnishings and carpet are set off by white oak railings and trim. Banks of greenery built into the floor accent the margins of the room. A sculpture donated by Merck

(See *Inn* p. 14)



A stone chimney 8 feet in diameter dominates the inn's community room, here being inspected by employees during an open house June 19 for NIH'ers. The fireplace includes a natural gas ignition system.

Inn (continued from p. 13)

graces the entryway.

Other common areas include a glassed-in playroom offering easy monitoring by parents and an adjacent play terrace. Each area includes seating for parents, a feature that inn executive director Andrew R. Tartler calls essential for maximum use.

"Studies show that play areas are used more frequently when parents have a place to sit," he said, indicating the care that went into even small details of the inn.

Sliding glass doors and screens in the play terrace admit some of the outdoors to the inn, a factor Tartler calls important when many pediatric patients are not permitted to play outside.

Toys and gadgets, including 35 miniature wooden airplanes donated by students at Baker Intermediate School in Damascus, are designed for "successful play," Tartler continued, defining this as play that accommodates all levels of ability.

Cork-backed flooring in play areas minimizes chances of injury due to falls, he added; a playground designed by the same architect who planned the Cabin John Regional Park play area will be built behind the inn in the future.

The second floor of the inn includes the residential section—four "pods" (A,B, C and D) containing nine suites, six of which are interconnecting (in case of visits by extended family). Each room sleeps four adults comfortably. All rooms include a bath and private phone (though phones for free long distance calls are located in each pod) and one room in each pod is completely wheelchair-accessible.

Two rooms come with kitchens in the event of long-term stays and two rooms have sliding glass doors leading outside. Ceilings in each room are a capacious 9 feet high.

"Some families might not want to stay here," allows Tartler. "There can



A number of congressional wives devoted great energy to get the inn built. Among them were top officers of the Friends of the Children's Inn, Inc. (from l) D. Chris Downey, secretary; Debbie Dingell, vice president; and Carmala Walgren, president.

be a magnifying effect when so many people in the same situation are put together." Other potential residents might object to house rules such as no smoking or alcohol consumption. For these people, NIH will continue to provide subsidized lodging at area hotels and motels.

Other inn amenities include two community kitchens with shelf and cabinet space for each family. Families, who stay for free but are asked to make a minimum donation of \$10 per night, must buy their own groceries; the inn provides only minimum refreshment. For purposes of hygiene, the dishwashers in each kitchen are equipped with a sanitation cycle. Also, icemakers are fully automatic, meaning that no dirty hands go fishing for loose cubes.

Meals can be eaten in two dining areas, each skylit and open to the kitchen via pass-throughs. The dining rooms also open onto covered outdoor

terraces furnished with tables and chairs.

Overlooking the chimney-dominated community room is a large television room with a big-screen color TV connected to the local cable (all rooms have cable access as well). Immediately adjacent is a solarium that also has a TV; parents are expected to use this room when a mellow PBS broadcast suits their mood more than blaring MTV.

Past the TV rooms is a glassed-in computer room. Five personal computers will allow children to keep up with homework, play video games or keep in touch with a relative back home who also has a computer.

Returning to the first floor, there are two quiet rooms for small meetings, a teen room for pinball games and socializing, a library/conference room, an information/administrative office and a lounge for volunteers.

Since the inn has only 4 paid staff, dozens of volunteers are needed to conduct orientations and operate the inn on a day-to-day basis. Presiding over the house is resident manager Kate Higgins, who has an apartment just to the right of the inn's front door.

Admission to the inn will be coordinated first by a social worker and subsequently by parents or guardians of children participating in NIH protocols. Preference will be accorded to children who are most ill. Age range will be 0-18, with some leeway for young adults.

"We might take someone as old as 25," said Tartler.

The NIH campus shuttle system now includes stops at the inn. The inn also has a shuttle bus of its own to accommodate the shopping needs of residents.

While NIH will contribute laundry service, electricity, and shuttle service, in addition to the land it has already given, funds for operating costs are still being collected. An endowment of some \$7 million is being sought, said Randy Schools, general manager of R&W and the only person to sit on both the inn board, which operates the inn, and the board of the Friends of the Children's Inn, which is the fundraising arm.

"So far we have raised \$5.4 million," Schools said.

"We hope eventually to raise about \$7 million, but that's a long way off. It would be nice if one day we could use the interest on that money to cover operating expenses for the inn."

"More than 4,000 people have already contributed their energy, money, love and support to this project," said Kathy Russell, president of the inn board.

Said Cindy White, whose daughter is an NIH patient and who also sits on the inn board, "This home will have a beautiful impact on countless children."

No one who has seen it can doubt her.

Children's Inn Had a Predecessor on Campus

While the Children's Inn at NIH is, in many respects, unique, it is not the first residence for ill children on the NIH campus.

Back in 1957, on the present site of Bldg. 37 west of the Clinical Center on South Drive, a 2-story house called the Children's Treatment Residence opened. Occupied by six boys ages 10-12, a housemother and a live-in counselor, the residence was built for use in NIMH's research on emotionally disturbed children.

"The house was built for children with severe behavior disorders," remembers Hazel Rea, deputy director of NIMH's intramural research program. "The patients were among the earliest occupants of the Clinical Center, but they were just awful to have in

a hospital. They would disconnect all the wires on the machines so that you didn't know what wire went where."

The Treatment Residence offered the opportunity to examine the effects of an "open setting" of living arrangements as opposed to the closed setting of a hospital ward.

"It was the brainchild of Dr. Fritz Redl," said Rea. "His idea was that these children needed 24-hour treatment in a residential situation. These were impulsive, acting-out children. The theory was that you dealt with their behavior on the spot. Tackle it right then and there, rather than talk about it later.

"I think it didn't last very many years," said Rea. "It's really not very comparable to the Children's Inn."



This photograph is from the Prints and Photographs collection at the National Library of Medicine. The curator, Lucinda Keister, would like more information about it, especially the year. The photo was taken when NIH employees were interviewed by WTOP radio in the cafeteria in Bldg. 1. The program was part of a series transcribed at government cafeterias in the Washington area. Does anyone remember the year this took place and the name of the interviewer? We have identified Dr. Evelyn Anderson, Dr. Irvin Fuhr, Hope Norris, Alex Adler, Virginia Burlingame, Dr. Morris Belkin, Dr. Stella Deignan, Roy Perry, Ariel Clark, and Catherine Schellack. Please send information to *Update*.

Parity Among Sexes Sought

New Women's Health Office at NIH Announced

By Carla Garnett

NIH has created a new office devoted entirely to research on women's health issues. Named the Office of Research on Women's Health, the new entity will help establish parity among the sexes in biomedical research.

"The Department of Health and Human Services and the NIH recognize the need to include women in clinical studies and to be attentive to women's health concerns," said NIH acting director Dr. William Raub, who announced the creation of the new office at a recent roundtable meeting of DHHS and NIH officials and members of the Congressional Caucus for Women's Issues.

"The NIH will take all the steps necessary to ensure that appropriate numbers of women are included in research projects," he said.

The new office comes to NIH amid criticism from some members of Congress that the institutes have not studied adequate numbers of women in clinical trials.

Criticism stemmed in part from a July 1990 General Accounting Office report that NIH had been slow to implement a policy published originally in the 1986 *NIH Guide to Grants and Contracts*. The policy suggested by the NIH advisory committee on women's health issues, informed grant applicants of the need to include women in clinical trials.

Raub announced plans for several measures that will immediately address the concerns of Congress and GAO.

One measure has already been implemented: *The NIH Guide to Grants and Contracts* now includes a revised announcement to would-be grantees that numbers of women in clinical trials should be proportionate to numbers of women with the condition under study.

Raub said NIH's new efforts toward women's health will include enhanced research activities by all institutes and will be intramural as well as extramural.

Raub's announcement warns grantees: Have "compelling justification" for excluding women from the study, or forfeit the NIH grant.

"Failure to provide gender information about proposed studies will result in deferral of the application," he said.



Dr. Ruth L. Kirschstein

In addition, required training sessions have been scheduled on seven different occasions to inform NIH personnel who handle grants of these new policies.

Rep. Patricia Schroeder (D-Colo.), cochair of the Congressional Caucus for Women's Issues, applauded the new NIH actions.

"I think we're going to find in the future that it will be much easier to keep track of and see what kind of progress

we're making," she said. "I think it shows the dedication of NIH and how well they were listening."

Schroeder recently advocated an increase in national obstetric and gynecological research.

"Women are more complex (than men) and therefore the studies, according to GAO, become all the more important," she said. You can have women who are pregnant and nonpregnant. You can have women pre-, post- or menopausal. All those states could require different types of treatment."

According to Sen. Barbara Mikulski, who introduced the Women's Health Equity Act in Congress Aug. 2, women have been shortchanged long enough.

"When one looks at medical practice, the facts are frightening," she said. "Women's health needs have either been ignored or our life processes—like birth and menopause—are often treated like diseases rather than natural processes to be studied, helped and assisted. Often our life processes are minimized or trivialized."

Schroeder said primary caregivers for women need the results of gender-specific research to direct them.

"(Without it), they are really flying blind," she said. "And that's been happening a lot as we look at the research."

One often-cited example of medical research results that differ among men and women is the 1981 NHLBI study of 22,000 male physicians.

That study found that men reduced their incidence of heart attacks by taking an aspirin every other day. Because the study involved no women, the preventive aspirin strategy may or may not be applicable to females.

"It's all a very well-kept secret that the number one killer of women in America happens to be heart disease," Schroeder said. "Sometimes I think there's been a myth out there that we're all healthy. But when you look at the statistics, we're not."

Raub said the majority of NIH's research is not gender-specific, but equally relevant to both sexes.

"The bulk of our clinical research is and should be applicable to both genders as is the fundamental basic science that makes those clinical research opportunities possible," he said.

NIGMS director Dr. Ruth Kirschstein echoed Raub's sentiments, citing an NCI colon cancer study that included women in numbers appropriate to the disease's prevalence in females.

"Unfortunately, colon cancer kills more women annually than all gynecological cancers combined," she said.

Kirschstein, who has been named acting associate director for research on women's health and will lead the new office on women's health until a permanent director is found, is cochair of the PHS coordinating committee on women's health issues.

"One goal of the Office of Research on Women's Health is to determine what research, intramurally and extramurally, may relate specifically to diagnosis, treatment and prevention of diseases in women," she said.

"The office will maintain an ongoing dialogue with the scientific community and with women's health advocates and will communicate their concerns to the director of NIH and to the directors of the various institutes, centers and divisions."

The new office will develop a trans-NIH plan to keep track of NIH-funded research of all diseases and conditions that affect women, she said.

Rep. Connie Morella (R-Md.), who represents Montgomery County in the House of Representatives and this year sponsored the Women and AIDS Outreach and Prevention Act, called for a special effort to increase the numbers of women in AIDS studies.

Representation of women in clinical AIDS studies critically trails representation of men, she said.

"We know that the federal response to the AIDS epidemic has been appropriate in terms of men—appropriate for the decade of the nineties—but the response to the epidemic in women lags about 10 years behind," she said.

"Statistically it's rather frightening that women now comprise the fastest growing group of people with AIDS," Morella continued.

In New York City, AIDS has become the leading cause of death for women ages 20 to 40, she said.

"So often women have been looked at as transmitters of the disease to men and to children without being looked at as entities unto themselves," she said.

Mikulski summed up the concerns of the caucus: "We want to be sure that research is translated into action, prevention, outreach, public education—not only of consumers but also of physicians who deliver service.

"This isn't a one shot deal," she continued. "This is a commitment to be sure that, when we go into the 21st century, we go in practicing 21st century medicine, but not with 14th century attitudes."

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CALENDAR

DECEMBER

An exhibit on "Public Health in New York City in the Late 19th Century," commemorating the centennial of the publication of Jacob Riis' *How the Other Half Lives* is now on display in the lobby of NLM, where it will continue until Dec. 28. The library is open 8:30 a.m. - 9 p.m. Monday - Thursday and 8:30 - 5 p.m. Friday - Saturday. For more information call (301) 496-5405. Single copies of a booklet bearing the same title as the exhibit may be obtained without charge by writing: Chief, History of Medicine, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 (please include a self-addressed label).

JANUARY

The G. Burroughs Mider Lecture will be Jan. 16, 1991, at 3 p.m. in Masur Auditorium, Bldg. 10. The speaker will be Dr. Mortimer Mishkin, chief, Laboratory of Neuropsychology, NIMH. His topic will be "Memory Circuits."

For information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.

IN OUR NEXT ISSUE. . .

Articles on 1990—the year in review at NIH; the new AIDS facility at the Clinical Center; NIH discoveries, 1930-1945 and the NIH budget. Also there will be our continuing features: NIHAA Forum, NIH Notes, Science Research Updates and news from and about NIHAA members.

Pays Tribute to Pratt

New Computer Exhibit Added to Stetten Museum

By Anne Barber

A new exhibit, "Computers in Medical Research," was recently added to the DeWitt Stetten Jr. Museum of Medical Research. The exhibit is located near the patient elevators on the first floor of the Bldg. 10 clinic. Opening ceremonies on Oct. 17 combined a symposium on computers in medical research with a tribute to Dr. Arnold W. "Scotty" Pratt, the first and only director of the Division of Computer Research and Technology since its origin in 1966 until Pratt's recent retirement this past June. Pratt was paid homage by many of his colleagues and friends at NIH.

"DCRT, in its every essence, is the house that Pratt build," said Dr. William F. Raub, NIH acting director. "It is tangible and durable. It was because of Scotty's foresight and commitment that DCRT moved ahead.

"Computers need to serve medicine, and medicine should serve people—that is what NIH and Scotty Pratt are all about," Raub stated.

Pratt came to DCRT from the National Cancer Institute, which he joined in 1948 as head of the energy metabolism section in the Laboratory of Physiology. In 1948, computing did not exist, even as a punchcard operation. Pratt's research at NCI led him to investigate a number of biomedical research areas to which computers might be applied. He subsequently published several papers on computational analysis of ultraviolet absorption spectra and the use of computers in cancer chemotherapy.

At Pratt's retirement, 42 years later, biomedical research at NIH had made major strides and computers have become an integral part of biomedical



NIH historian and curator of the DeWitt Stetten Jr. Museum of Medical Research Dr. Victoria A. Harden (l) presents Dr. Arnold W. Pratt, director of the Division of Computer Research and Technology from August 1966 to June 1990, with a miniature copy of the poster displayed in the exhibit.

programs and administrative procedures, with more than 5,000 personal workstations campus-wide and an \$800 million central computer facility.

Today, DCRT not only has primary responsibility for incorporating the power of modern computers into biomedical programs and administrative procedures for NIH, it also serves as a scientific and technological resource for other parts of the Public Health Service, and for other federal components with biomedical and statistical computing needs.

Dr. William C. Mohler, deputy director of DCRT, remembers Scotty as a pioneer in the true sense of the word—he explored the use of new instruments

along with computers. "He was also a developer," said Mohler. "He was told by Shannon (former NIH director Dr. James A.) to 'Go build a DCRT.' And that he did." In his response, Pratt said, "The exhibit tells the story. There is much for all of us to be proud of. I'm so glad that I had a great staff there with me in the minimum security detention center that we call DCRT. Shannon believed the job of NIH was to conduct and sponsor research. And since there was no computer vendor that could provide what Shannon wanted, he said, 'You go and do this, and earn your way on a fee-for-service basis.'" Turning to Dr. David Rodbard, the newly appointed DCRT director,

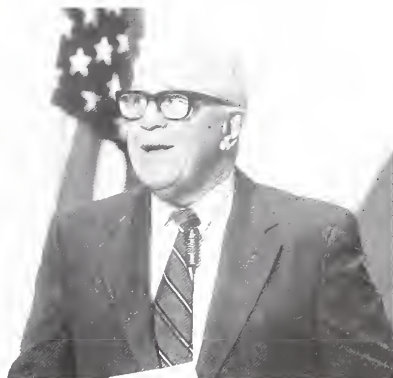
Pratt gave this message: "I leave you with some images to live up to, but I also leave you with one hell of a staff and you will need them." Dr. Thomas Lewis, chief of the Clinical Center's information systems department, spoke on "Medical Informatics, Medical Care, and Medical Education." He stated that Scotty had been his mentor since 1971 when he joined NIH.

"When Scotty began, there were no experts in the computer field. Now they are becoming increasingly specialized, which is essential to NIH's environment. Scotty's theory—'Get rid of those punchcards and make information systems easy to use'—was good news to the CC, which is data intensive," continued Lewis. "With 17 floors and 6 miles of corridors, we really need information systems."

Dr. Daniel R. Masys, director of the Lister Hill National Center for Biomedical Communications, spoke on "Computing in the Future: Visualizing the Virtual Library." Stating that no cards have been added to NLM's catalogue division since 1980, Masys said, "And none will ever be added again. Everything is now done on microcomputers."

"This was all unforeseen 30 years ago. During the past 30 years we have seen computers woven intimately with patient care. Today, however, the game is changing. New science and new technology equal new opportunities." He said computational biology, which compares patterns of molecules, and the human genome project, with its long DNA sequences, make this the era of images.

NLM is building a digital image library that would have a complete set of x-y-z numerical coordinates representing the internal and external structure of an entire human being at millimeter-level resolution. This "Visible Human" project would yield a computer data set of unprecedented detail and form the basis for a virtually



Dr. Arnold W. "Scotty" Pratt

unlimited number of image renderings of the human body. But, he states, "We have far to go to make it usable by our professional colleagues."

Masys closed with an old Chinese proverb: "Tell me and I will forget, show me and I may remember, involve me and I will understand."

Rodbard, following in Pratt's footsteps as the new DCRT director, said he considers himself very fortunate to have been working with Scotty in 1966 when computer use at NIH took off. "However," he stated, "as exciting as it's been over the last 25 years, it

will be equally or more exciting in the next 25."

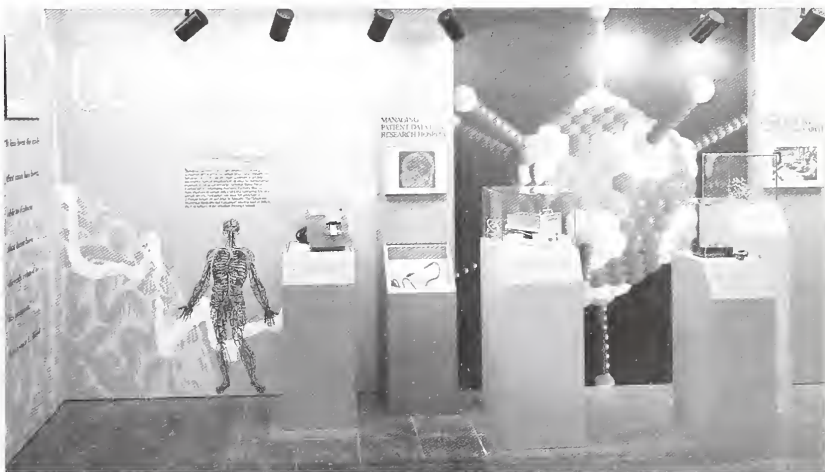
Rodbard compared DCRT's future to riding two ocean waves at the same time, each accelerating with growth. One wave is the computer with its hardware and software, and the other is biomedical research. "We need to harness these two waves and make them into one," he says.

In closing, Rodbard said, "I am looking forward to going onward from here. My hat's off to Scotty and the entire DCRT staff."

Dr. Victoria A. Harden, NIH historian and curator of the Stetten Museum, presented Pratt with a miniature copy of the poster used in the exhibit as a memento of the occasion.

After a standing ovation from the crowd, Pratt and his many friends and colleagues attended a reception held immediately following in Bldg. 10's Visitor Information Center.

The exhibit was produced by the Stetten Museum in collaboration with the NIH Division of Computer Research and Technology, the National Library of Medicine, and the Warren Grant Magnuson Clinical Center.



This exhibit, "Computers in Medical Research," is part of the DeWitt Stetten Jr. Museum of Medical Research, which collects and exhibits biomedical research instruments and other artifacts relating to NIH history.

Endocrinologist, Mathematician, Statistician

Meet the Newest Institute Director, Dr. David Rodbard

By Anne Barber

Dr. David Rodbard became the director of the Division of Computer Research and Technology on Nov. 5. He succeeds Dr. Arnold W. Pratt, DCRT's first and only director until retiring last June.

"I would like to see an increase in scientific computer applications that would assist scientists in labs/clinics as well as statisticians and epidemiologists throughout the NIH community," he said. "This will involve personal computers, workstations, mainframes and supercomputers."

One of the major functions of the computer center, Rodbard points out, is to serve as the focal point and coordinator of all computer activities on campus. "And, we have many diverse systems," he adds.

"We want to encourage more interactions with all groups at NIH including the Clinical Center, National Library of Medicine, Lister Hill Center, National Center for Research Resources, and NCI's Advanced Scientific Computing Laboratory in Frederick, as well as all computer facilities on campus, large or small." In addition, Rodbard wishes to maintain and further develop advanced research in biomedical computing with emphasis on molecular graphics and dynamics, the biophysics of molecular interactions, the analysis of nucleic acid and protein sequence data leading to the prediction of secondary and tertiary structure, and imaging on both the clinical and molecular levels. "I have a great deal of respect for the high level of expertise in DCRT and plan to continue the many effective programs and services," he said. The Computer Center Branch has provided consistent, reliable, economical service on the central

mainframe facilities, among many other activities. The Data Management Branch has developed and supported the administrative data bases essential to the operation of NIH, both intramural and extramural.

"I feel that the tremendous talent within DCRT can better serve the NIH community by establishing close links with multiple labs throughout NIH. We can assist with the computer automation of labs throughout the campus."

The task of computerizing biomedical research is so large that DCRT cannot do it alone, he admits. "Acting as a reservoir of expertise and a resource for training, DCRT can provide support for user groups and serve as the



Dr. David Rodbard

hub of the network that will link all scientists at NIH with each other and the outside world." In the near future, Rodbard sees the networks RESnet and NUnet having a tremendous impact on NIH scientists.

The recent establishment of the Enter Bulletin Board System allows scientists to talk to one another almost

instantly and effortlessly, he points out. "This means they can share reagents, cells, antibodies, isotopes, even transgenic animals, that may lead to considerable cost savings in this era of austere budgets."

Rodbard would eventually like to see a listing by author, title and keywords of all abstracts, manuscripts, and publications by NIH scientists entered into BBS at the same time they are submitted for clearance for publication. This would enable other NIH scientists to have access to the information 6 to 12 months in advance of publication.

"Working together with NLM and Lister Hill Center, we could perhaps adapt Grateful Med software to retrieve this type of pre-publication information," he continued. "I am sure NIH scientists can conceive other important uses for BBS and the networks."

DCRT's Computer Systems Laboratory has been a leader in the development of advanced laboratory work stations and associated software including a lab analysis package. "This is just the beginning of the development of tools for use by bench scientists at NIH," he said.

Rodbard sees the large biometrics/epidemiological community at NIH as an important ally for DCRT, both in terms of its expertise in statistical computing and in providing consultation in experimental design/data analysis. This group of scientists has developed considerable computer expertise of its own and DCRT would like to join it in a number of ventures.

"Certainly biomedical research is moving faster than ever before," he observed. "Likewise, the development in computer hardware systems and software is moving at a fantastic pace." The job of DCRT, he says, is to harness these two developments in order to provide practical assistance to all scientists.

When Rodbard joined NCI back in

1966 as a clinical associate in the Endocrinology Branch, he worked closely with DCRT especially in mathematical modelling of radioimmunoassay and receptor binding data.

"I had the good fortune to learn my way around DCRT rather quickly," he said. "I came here for assistance as well as to use the superb central facilities. I would like to make it possible for more scientists to exploit the resources of DCRT to help facilitate their research as much as DCRT facilitated mine. I'm convinced computer networking will have a tremendous benefit for all aspects of life at NIH," he said.

Another of Rodbard's goals is to explore possible collaboration with a wide range of outside institutions including universities, other federal government agencies and industry. He would also like to expand DCRT's involvement internationally by bringing recognized scholars to DCRT through the auspices of the Fogarty International Center.

"The computing scene changes so rapidly," he says. "It is very important for us to stay in touch with the world to stay abreast."

Rodbard is also interested in expanding the summer program for students to encourage careers in biomedical computing and to reach minorities and persons with special needs.

DCRT's Personal Computing Branch, according to Rodbard, has had a tremendous impact on providing support and consultation to users of PCs at NIH. "We would like to see this kind of support enhanced, especially in high level scientific application areas, with more sophisticated software."

Prior to becoming DCRT director, Rodbard served as chief of NICHD's Laboratory of Theoretical and Physical Biology and head of its theoretical biology section. He also served as coordinator of the Clinical Center's "Computers in Clinical Medicine" elec-

tive course from 1981 to 1989.

"In this capacity," he said, "I developed a faculty of more than 70 scientists drawn from all the institutes plus DCRT and the Lister Hill Center. This provided me with a fairly high degree of familiarity with computer activities in the area and brought me into close contact with all laboratories and branches of DCRT."

His interest in mathematical statistics and biophysics using computers to solve problems, especially in the area of endocrinology, led Rodbard to develop a number of computer programs that have been distributed and used throughout the world. Examples include the Logit-Log method for radioimmunoassay; the FLEXIFIT and the ALLFIT methods for analysis of families of dose response curves; and LIGAND for analysis of receptor binding data. The latter two programs were developed in collaboration with Dr. Peter Munson of NICHD and Dr. Andre DeLean, a former NCI fellow. One of the papers written by Munson and Rodbard has been cited nearly 2,000 times and has been listed as one

of the 300 most-cited articles in the world in biomedical literature.

Rodbard, a member of the PHS commissioned corps, earned his M.D. in 1964 from Western Reserve University School of Medicine in Cleveland. He received his B.A. degree, magna cum laude, from the University of Buffalo in mathematics and chemistry.

An author or coauthor of more than 260 publications, Rodbard also serves as board member and treasurer of the Foundation for Advanced Education in the Sciences. He is an active member of the American Society for Clinical Investigation, American Physiological Society, American Society for Biochemistry and Molecular Biology, American Statistical Association, Biometrics Society, the Endocrine Society, and the American Diabetes Association and others.

"I am very proud and honored to have been appointed to this position," says Rodbard. "And I look forward to the many exciting developments of the next decade as we prepare for computing in the 21st century."



In accordance with construction tradition and lore to assure good luck, an American flag and a lone cedar tree sit atop the Child Health and Neurosciences Bldg. 49 before the roof is finally topped. Bldg. 49 is the first new building on campus in 10 years and it is scheduled for completion in late 1992.

NIH Claims Ten Percent of Decade's Hundred Most-Cited Scientists

By Carla Garnett

Intramural NIH has distinguished itself in one of the most competitive areas of biomedical science—publication of research. According to a recent issue of *The Scientist*, ten NIH researchers are among the top hundred most-cited scientists of the 1980's. The list was compiled from the files of *Science Citation Index*, a publication of the Philadelphia-based Institute for Scientific Information (ISI).

"We're very proud that a number of our prominent scientists have been recognized by their publications," said Dr. Philip S. Chen Jr., NIH associate director for intramural affairs.

Chen's work was recently lauded as well in another ISI publication, *Current Contents*: His 1956 methodology paper on microdetection of phosphorus has drawn more than 5,400 citations, making it one of the most-cited articles of all time.

Another NIH'er made the all-time list—Dr. Martin Rodbell of NIEHS. His 1964 article on the metabolism of isolated fat cells has collected more than 2,800 citations over 40 years. The SIS index covered citations of publications back to 1945.

"There are various measures of a scientist's impact," he continued. "There are prizes won, awards conferred and citations. That NIH, by virtue of having 10 highly cited scientists—and actually many more—has had this great an impact on the science of other researchers is very important."

The 10 NIH researchers found in the top 100 most-cited scientists of the decade are listed below.

Dr. Robert Gallo, chief of NCI's Laboratory of Tumor Cell Biology and co-discoverer of the HIV virus, is the world's most-cited scientist of the last decade, collecting more than 23,000

citations of his articles. His most cited paper was published in *Science* in 1984, had been cited almost 1,500 times by December 1988 and is the 10th most-cited article of the decade.

NIAID director Dr. Anthony Fauci, who is also NIH associate director for AIDS research, and chief of NIAID's Laboratory of Immunoregulation, is the eighth most-cited scientist during 1980 to 1988. He is also author of the paper most cited in the last 2 years; his review, "The human immunodeficiency virus: Infectivity and mechanisms of

collected close to 400 citations.

NCI Metabolism Branch chief Dr. Thomas Waldmann is number 34 of the top 100 most-cited scientists. His most cited paper during the 1980's is "A monoclonal antibody (anti-Tac) reactive with activated and functionally mature human T cells," which was published in the *Journal of Immunology* in 1981 and had collected 843 citations by the end of 1988. Waldmann collected almost 6,800 citations overall from 1980 to 1988.

Dr. Stuart Aaronson, chief of the Laboratory of Cellular and Molecular Biology at NCI since 1977, is the 46th most-cited scientist in the last decade. According to ISI, his 1982 *PNAS-Biology* article, "Translocation of the c-myc gene into the immunoglobulin heavy-chain locus in human Burkitt lymphoma and murine plasmacytoma cells," amassed more than 560 citations through 1988.

NCI Laboratory of Chemoprevention chief Dr. Michael Sporn was cited almost 370 times for his paper, "Transforming growth factor-b in human platelets: Identification of a major storage site, purification, and characterization," published in 1983 in the *Journal of Biological Chemistry*. He is the 51st most-cited scientist of 1980 to 1988.

Dr. William Paul, chief of the Laboratory of Immunology at NIAID, was the 53rd most-cited scientist during the 1980's, collecting close to 5,680 citations in that decade. His most-cited paper, "Identification of a T-cell derived B-cell growth factor distinct from interleukin-2," was published in a 1982 *Journal of Experimental Therapeutics*. That paper collected more than 530 citations by 1989.

NHLBI Pulmonary Branch chief Dr. Ronald Crystal, whose 1981 *American Journal of Medicine* paper, "Interstitial lung disease: current concepts of patho-



Dr. Robert C. Gallo, chief of NCI's Laboratory of Tumor Cell Biology, is the world's most-cited scientist of the last decade, collecting more than 23,000 citations of his articles.

pathogenesis," published in a February 1988 *Science*, has already garnered more than 300 citations.

Dr. Ira Pastan, chief of the Laboratory of Molecular Biology at NCI, has been among the top 50 most-cited researchers since 1965. For the period covering 1980 to 1988, he ranks 33rd. His most cited paper during that time is "Journey to the center of the cell: Role of the receptosome," which was published in *Science* in 1981 and

genesis, staging, and therapy," collected about 300 citations, is 59th among the 100 highly cited researchers through 1988.

Dr. John Daly, chief of the Laboratory of Bioorganic Chemistry at NIDDK and collecting more than 5,220 citations overall, ranks 62nd among the top-cited scientists.

According to *The Scientist*, his total citation count "reflects numerous high-impact papers rather than one or two blockbusters." ISI reports that at least 10 of Daly's papers have been cited more than 300 times each. His most cited paper during the 1980's was "Adenosine receptors in the central nervous system: Relationship to the central actions of methylxanthines," published in a 1981 issue of *Life Sciences*.

One other NIH researcher was recognized in ISI's top 100 top-cited scientists of the last decade—NCI Surgery Branch chief Dr. Steven Rosenberg, who wrote the 1982 *Journal of Experimental Medicine* paper, "Lymphokine-activated killer-cell phenomenon: Lysis of natural-killer resistant fresh solid tumor cells by interleukin-2 activated autologous human peripheral-blood lymphocytes," that was cited more than 680 times through 1988.

Rosenberg's true ranking could not be ascertained by ISI because another S. A. Rosenberg—Saul A., who conducts oncology research at Stanford University—was also highly cited. The Rosenbergs' papers are commingled in ISI data files. *The Scientist* estimated that articles written by NIH's S. A. Rosenberg have been cited more than 5,000 times through the 1980's.

A final interesting point noted by *The Scientist*—All ten of these highly cited scientists are career NIH'ers with 27 years average length of service.

News From and About NIHAA Members

Dr. Robert S. Bar, who was at NIH from 1974 to 1977, is currently professor of medicine, director of the division of endocrinology and director, Diabetes-Endocrinology Research Center at the University of Iowa.

Thomas G. Barbour, former assistant director for training and development, who was at NIH from 1975 to 1990, writes: "I have recently left the Public Health Service. I am teaching part-time at Montgomery College in business and management. Also, I have started a human resources management consulting company."

Dr. James A. Belli, who was a clinical associate in the Radiation Branch at NCI, has been named the initial holder of the John Sealy Centennial Chair in Radiation Therapy at the University of Texas Medical Branch, Galveston. Belli has been professor and chairman of radiation therapy there since 1982. The endowment for the named professorship was presented to UTMB by the Sealy & Smith Foundation in recognition of the 100th anniversary of the founding of John Sealy Hospital.

Dr. Glenn C. Davis, at NIMH from 1975 to 1979, is chairman in the department of psychiatry, Henry Ford Hospital, Detroit, adjunct professor of psychiatry, Case Western Reserve University School of Medicine, Cleveland, and clinical professor of psychiatry, University of Michigan School of Medicine, Ann Arbor. His current research involves risk factors for anxiety disorders and affective illness, studies of the natural history of psychiatric disorders in young adults; he currently has 2 patients at NIMH enrolled in inpatient studies.

Dr. Pierre De Meyts writes: "I was a Fogarty International postdoctoral fellow and visiting associate with Jesse Roth from January 1973 to July 1976. For the last 4 years, I was director of diabetes, endocrinology and metabolism at The City of Hope in Duarte, Calif. I am moving to Denmark on Sept. 1 as the new director of the Hagedorn Research Laboratory in Gentofte (Copenhagen), an independent basic research institute supported by Novo Nordisk."

Dr. Frank L. Douglas, NHLBI, 1979-1982, reports: "In May 1988, I was promoted to senior vice president and director of research of Ciba Geigy Pharmaceuticals. My responsibility includes discovery of new molecular entities in hypertension, angina, atherosclerosis, rheumatoid arthritis and osteoarthritis for our world wide effort."

Dr. John B. Dunbar was chief, Program Projects Branch, NHLBI, 1967-68 and a program officer, Hypertension & Kidney Diseases Branch, NHLBI, 1976-1986. Since 1986, he has been professor of epidemiology at Medical University of South Carolina, with special emphasis on health promotion for minority groups.

Drs. Emil Frei III and Emil J. Freireich, both of whom worked together at NCI from 1955 until 1965, were presented the first of what are to be annual NIH Distinguished Alumni Awards on Sept. 10, for their considerable accomplishments in cancer treatment research. While at NCI they both developed the first successful cure for childhood cancer. They left NCI for the University of Texas M.D. Anderson

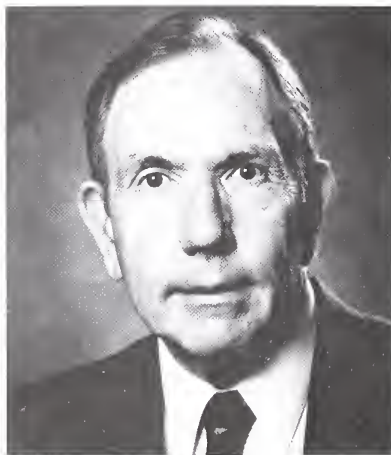
(See *Members p. 24*)

Members (continued from p. 23)

Cancer Center and continued their research in adult leukemia. Frei became director and physician-in-chief at the Dana-Farber Cancer Institute, Boston, in 1972. Freireich stayed at M.D. Anderson, where he is professor of developmental therapeutics and medicine and director of the adult leukemia service. During 1990, he has been at NCI carrying out a special project for the NCI director. Both Frei and Freireich received small replicas of the sculpture "Healing Waters" by artist Azriel Awret, (see related story on page 5). They were also honored at a reception on Sept. 9 at the Mary Woodard Lasker Center attended by friends and colleagues.

Dr. Robert Goldberger, who was at NIH for 20 years, writes: "I left the NIH in 1981 to become provost and vice president for health sciences at Columbia University, but within a year I changed jobs, becoming provost of the entire university. Last summer, after 8 years at Columbia, I left to begin yet another career—this time in rehabilitation medicine, a field that has never really flourished. It occurred to me that I might be able to make a useful contribution if I could draw on my training as a physician, my 20 years of research experience, my administrative experience in science and higher education, and whatever insights come from being disabled myself (MS) and using a wheelchair. I am spending this year (on leave from Columbia) learning the basic medical aspects of the field at the Rusk Institute for Rehabilitation Medicine at the NYU Medical Center."

Dr. Joe R. Held, director of DRS in 1972-1984, reports that he retired from the PHS in 1984 to join the staff of the World Health Organization/Pan American Health Organization. While with WHO/PAHO, he was director of



Dr. Joe R. Held

the Pan American Zoonoses Center in Buenos Aires, Argentina, until 1987, when he was appointed coordinator of the Veterinary Public Health Program at PAHO headquarters. He recently joined the staff of Charles River Laboratories as vice-president, primate resources.

Dr. Edward A. Lichter, NIAID staff scientist 1961-66, received a Distinguished Service Award, ACPM for 1990. He is currently in the department of medicine at the University of Illinois College of Medicine.

Dr. Seymour Perry, who was at NIH from 1961 until 1980, writes that during his tenure at NIH he held various positions. From 1961 until 1974 he worked at NCI. In 1974 he was appointed special assistant to the NIH director and helped develop the NIH Consensus Development Program, becoming its first director. In 1978 he was named NIH associate director for medical applications of research and was also made acting director of the National Center for Health Care Technology, OASH. With his appointment as director and assistant surgeon general in 1980, he left NIH. Since 1982 he has

been connected with Georgetown University School of Medicine where he is chairman of the department of community and family medicine and director of its Program on Technology and Health Care. He was elected to the Institute of Medicine in 1982.

Dr. Margaret Pittman, Division of Biologics Standards 1936-1971, was honored for her lifetime of scientific achievement and her contributions toward the full participation of women in microbiology with the presentation of the Alice Evans Award at a special reception during the 1990 American Society for Microbiology annual meeting.

Dr. Fred Rosen, who was at NCI as a senior assistant surgeon from 1957 until 1959, was designated "Distinguished Alumnus, 1990" during alumni reunion weekend in May at Case Western Reserve University School of Medicine. He is a 1955 graduate who is internationally known for his work in immunology and immunologic disorders and has held the Gamble Professorship at Harvard Medical School. He is also the president of Boston's Center for Blood Research and program director of the Clinical Research Center of the Children's Hospital Medical Center. During the summer, he is distinguished visiting scholar at Christ College of Cambridge University, England.

Dr. Albert Sabin, most recently at the Fogarty International Center as senior medical advisor and lecturer, delivered on Oct. 3 the fourth annual Florence Mahoney Lecture on Aging sponsored by NIA. His topic was "Aging of Individuals and of Society: Concepts, Challenges and Priorities."

Dr. Jay Skyler, a staff associate at NHLI in the Hypertension Endocrine Branch, Laboratory of Biochemical

Pharmacology from 1973 to 1975, and currently professor of medicine, pediatrics, and psychology at the University of Miami, was elected president-elect of the American Diabetes Association (ADA) during its 50th annual meeting in June 1990. He has served the ADA on the board of directors and executive committee of both the national association and the Florida affiliate, of which he was president. On the national level, he has been an active member of a variety of committees. He was founding editor-in-chief of *Diabetes Care*, a professional publication of the ADA.

Dr. George F. Vande Woude, who has been at NIH since 1972 and is currently director of the Basic Research Program at NCI's Frederick Cancer Research and Development Center, received a Robert J. and Claire Pasarow Foundation award for cancer research. The foundation, created in 1987 to stimulate medical and scientific research, also gives yearly prizes for cardiovascular and neuropsychiatry research. Each recipient receives a \$35,000 cash award. The recipient's institution also receives \$15,000 for support of a research fellow.

Dr. John H. Weisburger, NCI Etiology Division, 1949-1972, is now senior member, American Health Foundation, Valhalla, N.Y. He writes that he has "published over 400 research papers on the mechanism of cancer causation, with emphasis on nutrition and cancer." He recently received the Distinguished Service Award from the American Society of Preventive Oncology. He was recognized with the Ambassador award of the mid-atlantic division of the Society of Toxicology. He received a plaque from the New Jersey state commission on cancer research for leadership as chairman of the scientific review panel.

Scientists Report Gains in Understanding Alzheimer's Disease

By Bobbi Bennett

Encouraging progress is being made by intramural scientists in understanding the clinical course and genetics of Alzheimer's Disease (AD) and in designing strategies for treating it. This research was described to reporters at a recent NIH Science Writers Seminar by Dr. Stanley Rapoport, chief of NIA's Laboratory of Neurosciences; Linda E. Nee, social science analyst in the clinical neuropharmacology section, NINDS; and the seminar's moderator Dr. Trey Sunderland, chief of the Unit on Geriatric Psychopharmacology of NIMH's Laboratory of Clinical Science.

Two to 4 million Americans are believed to now suffer from AD, and experts predict that number will increase to 14 million by the middle of the next century. The dementia of this cruel disease involves memory loss, disorientation, impairment of learned skilled movements and loss of language and object-recognition abilities.

The only definitive way to diagnose AD is when an autopsy reveals large amounts of the disease's hallmarks, neuritic plaques and neurofibrillary tangles, in brain tissue. The tangles are dense networks of nerve cell fibers to which phosphate molecules have been added (phosphorylated) abnormally. The plaques are degenerating nerve cell terminals that have cores of beta-amyloid, a protein not normally found in the brain.

The plaques and tangles are not equally distributed in the AD brain. "AD is a well-behaved disease; it doesn't march indiscriminately through the brain," stated Rapoport. Rather, AD affects the association areas of the brain that process sensory inputs and are involved in higher cognitive functions

such as speech, language, and elaborate planning. These regions are larger in the human brain than in that of any other mammal. AD's preference for this region has led Rapoport to theorize that the disease may have been introduced during the evolution of primates to man and may explain why there is not—and may never be—an animal model for AD.

Brain Imaging

To study the course of AD, Rapoport and his colleagues have been using PET, an *in vivo* imaging technique that can be used to measure the energy demand—and therefore metabolic activity—in regions of the human brain. They have found that, as the disease progresses, the metabolic rates decrease in the association areas. There also are differences between the corresponding association areas in the right and left hemispheres of the brain that are not seen in normal individuals. On the basis of these asymmetries, they have been able to predict, 1 to 3 years in advance, what type of deficit—language or visuo-spatial—patients with early AD will develop. For example, in right-handed patients, lower metabolic activity on the left side of the brain indicates their major problem will be with language. Such individuals will have difficulty finding the correct words when speaking but will be able to find their way home. The converse is true when the PET scan detects decreased activity on the right side. Rapoport pointed out that this predictive ability will be especially important once effective therapies are discovered because physicians could then initiate the appropriate therapy earlier.

He also mentioned a preliminary
(See *Alzheimer's* p. 26)

Alzheimer's (continued from p. 25)

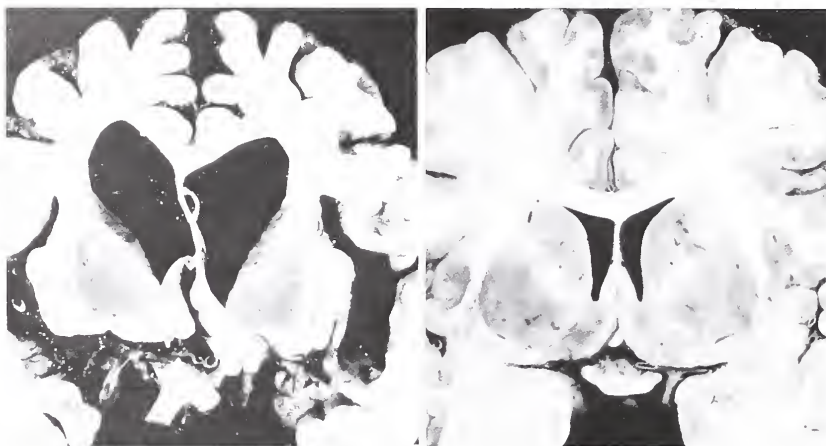
study by members of his laboratory in which regional cerebral blood flow was measured in four AD patients with moderate dementia when their brains were "at rest" and when stimulated by a picture recognition task. The results indicated that some of their neurons in the region affected by AD were still alive and could be activated to the same extent as those of normal controls. This provides hope that when drugs are found, the brain cells of AD patients will be able to respond to them.

Genetic Heterogeneity

There are three types of AD. About 60 percent of AD cases are sporadic, that is, only one person in a family is affected. When several members of a family are affected but in a random pattern, AD is said to be familial. Patients with this type, which accounts for about 30 percent of the cases, may have a genetic predisposition to AD such as receptor sites for environmental toxins. The remainder of the cases—less than 10 percent—are of the autosomal dominant type, in which people definitely have a gene for AD that is passed from parent to offspring for at least three generations, both sexes are affected equally, and an identifiable pattern is formed. With this type, patients have an early onset, anywhere from 25 to 52 years of age.

"We've come a long way in the field of AD and in genetics," said Linda Nee, who has been trying to sort out the influence of genetic and environmental factors in AD. She has traced the disease through eight generations of a family, the largest such study ever reported. About 50 percent of the offspring were found to be affected, which indicates an autosomal dominant pattern of inheritance.

Molecular genetic analysis of this and three other large families (two of



Patients with Alzheimer's disease lose 40 percent of their brain tissue during the 8- to 15-year course of the disease, as can be seen in the brain on the left from a 71-year-old man who died of Alzheimer's disease. The brain on the right is from a 70-year-old man who died in an automobile accident.

which Nee also investigated) enabled scientists in 1987 to detect a genetic marker for AD on chromosome 21. (This is the chromosome that is also involved in Down syndrome. About 50 percent of the patients with Down syndrome who live past the age of 35 develop a full-blown dementia that is indistinguishable from AD.) However, other investigators have had difficulty repeating this work. Nee believes this may be due to the heterogeneity of AD itself.

But AD is not strictly a genetic disease. In her large study of identical twins, Nee has found that both twins developed AD in only 40 percent of the pairs, a rate similar to that of identical twins catching the polio virus. In one set, a twin has had AD for 13 years yet the other remains normal. This has led her to speculate that environmental causes and more than one gene may be involved in AD.

Nee is currently following 20 families with the inherited form of AD. Their cells and pedigrees are available to other researchers through NIA's cell bank at the Coriell Institute for Medical Research in Camden, N.J.

Combination Therapy

Since 1976 when autopsied brains of patients with AD showed devastation of the cholinergic system—which uses acetylcholine (ACh) to transmit messages and is important for memory—drug research has been focused on finding ways to replace or build up the levels of ACh.

So far there has not been much success with cholinergic drugs. The most promising ones—such as physostigmine and tetrahydroaminoacridine (THA)—block the normal metabolism of ACh within the brain. But, ACh is not the only neurotransmitter or peptide that is decreased in AD. As Sunderland pointed out, "The cholinergic system takes up only a small percentage of the brain yet 40 percent of the brain is lost by the time an AD patient dies. So, other systems have to be involved." Therefore, he believes that a multiple drug approach will be needed, as in cancer chemotherapy.

Sunderland has been treating AD patients with a combination of physostigmine plus l-deprenyl. In earlier studies, his group found that low doses

of l-deprenyl produced modest cognitive and behavioral improvements in a group of 17 patients with AD. At low dosages the drug selectively inhibits the only enzyme—monoamine oxidase-B (MAO-B)—known to be elevated in AD. MAO-B is involved in the breakdown of several important neurotransmitters including dopamine, the one deficient in Parkinson's disease (PD). L-deprenyl was recently approved by the FDA for treating PD.

In the double-blind trial of the combination, 16 patients received either physostigmine plus l-deprenyl or physostigmine alone for 3 weeks, then placebo for 1 week, and then crossed over to the other drug(s) for another 3 weeks. Neither drug had any serious side effects.

This preliminary study suggests that the combination is better than physostigmine alone, but the effect appears to be additive rather than synergistic. "At this point, we'll take any improvement, given the track record of the field at

large," said Sunderland.

The benefits from the combination appear to hinge on the patient's ability to achieve and maintain a high level of physostigmine in the blood. Five patients who did not achieve detectable levels of physostigmine showed no benefit from it or from the combination. The patients with the highest blood levels of physostigmine had modest improvement in memory and when they were receiving the combination therapy, these patients showed more interest in social interactions and had brighter moods. Sunderland is planning to try this combination again with twice the dosage of physostigmine and will also try other drug combinations.

Sunderland stressed, "There will not be a single magic bullet for AD therapy. Rather we envision more of a combination approach; we're attempting to build one small additive improvement on another, and hopefully get a synchronous effect that will be of even greater benefit than either drug alone."



These identical twins had autopsy-confirmed Alzheimer's disease. Twin A (l) developed the disease 2 years before her sister did, even though her sister had a history of head trauma, often thought to be a precipitating factor in AD. Identical twins were found to both develop AD only 40 percent of the time, which indicates that environmental factors probably play a role in AD.

Science Research Updates

TYPE 1 NEUROFIBROMATOSIS GENE IS IDENTIFIED

NINDS-supported scientists have reported identifying the gene that, when damaged, causes neurofibromatosis type 1 (NF1), or Von Recklinghausen neurofibromatosis, the most common nervous system disease caused by a single gene defect.

Dr. Francis Collins and colleagues at the University of Michigan, working with NINDS support, found the gene for the disorder on chromosome 17. An independent group at the University of Utah simultaneously announced the same discovery in a separate publication. (Within a month the Utah team also reported that the sequence of the gene's protein product closely resembles a protein—GTPase-activating protein, or GAP—which has been the subject of intense research because of its role, still incompletely understood, in cancer development.)

By having the gene, investigators hope to learn how the damaged gene causes NF1 and if it plays a role in some common malignancies. Ultimately, the gene discovery may result in more effective treatments such as new drugs or a replacement for a genetically altered protein.

DEFECTIVE GENE CAUSES ONE FORM OF OSTEOARTHRITIS

NIAMS-supported scientists have identified for the first time a gene that causes osteoarthritis, the most common form of arthritis. Genetic studies of three generations of a family with an unusual early developing form of osteoarthritis revealed a mutation in af-

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Research Updates

(continued from p. 27)

affected family members in the gene for collagen II, a protein that strengthens the cartilage that covers and cushions joints and that typically breaks down in osteoarthritis.

The mutation, a single base deletion, resulted in the substitution of one amino acid for another in the more than 1,000 that make up the collagen protein. The single amino acid substitution was found in all affected members of the family but not in any of the unaffected members tested or in 57 unrelated individuals.

This research lays the groundwork for identifying other mutations that may be responsible, at least in part, for many cases of osteoarthritis. Future research on such genetic mistakes may also open up new avenues for treatment. Osteoarthritis affects an estimated 16 million Americans. This work was reported by Dr. Darwin Prockop and his colleagues at Thomas Jefferson University, Philadelphia, and Dr. Roland W. Moskowitz at Case Western Reserve University in Cleveland.

RECOMBINANT PROTEIN PLUS AZT BLOCKS SPREAD OF HIV INFECTION IN HUMAN CELLS IN VITRO

Recent laboratory experiments have shown that a novel, genetically engineered therapeutic agent combining a human cell component (CD4) and a toxin (PE40) from common soil bacteria effectively kills HIV-infected human T cells and macrophages in culture, and does not harm uninfected cells. Most importantly, when the antiviral drug AZT is used together with the agent (CD4-PE40), infectious AIDS virus is eliminated from the test system.

Drs. Edward Berger, Bernard Moss and colleagues in NIAID's intramural Laboratory of Viral Diseases collaborated with Dr. Ira Pastan and his

colleagues in NCI's intramural Laboratory of Molecular Biology to develop and test CD4-PE40.

CD4 is a receptor molecule, or gateway, found on the surface of some immune system cells such as T4 cells and monocyte/macrophages. An HIV surface protein called gp120 is able to attach to CD4. Once attached, the virus can use CD4 to gain entry to infect the cells, where it can replicate.

Laboratory experiments have shown that genetically engineered variants of soluble CD4, including CD4-PE40, attach to the HIV gp120 proteins found on the surface of infected cells that are producing HIV. When CD4-PE40 comes into contact with such cells, the CD4 portion attaches to the gp120 and the PE40 toxin component kills the cell.

The scientists observed that human T-cell cultures infected with HIV and then treated with a combination of CD4-PE40 plus AZT were protected from virus spread and resulting cell death. Most importantly, infected cultures treated with CD4-PE40 plus AZT showed no traces of infection with HIV even 3 weeks after removal of the drugs. In previous experiments in which similar cell cultures were exposed to HIV and not treated, all the cells died within 14 to 20 days due to spread of the virus.

While the scientists do not expect that this means they can cure an HIV-infected person, CD4-PE40 might eventually have an application in reducing the number of infected cells in a person's body and possibly slowing disease progression, particularly in combination with antiretroviral agents like AZT. Upjohn Pharmaceuticals of Kalamazoo, Michigan, has a licensing agreement with NIH to do further research on CD4-PE40.

MUTATION IN GENE INCREASES LIFE SPAN OF NEMATODE AND SLOWS ITS RATE OF AGING

An NIA-supported researcher has found that mutations in a single gene in the worm *Caenorhabditis elegans* (*C. elegans*) can double the maximum life span of the worm.

Dr. Thomas Johnson at the University of Colorado in Boulder reports that mutations in the worm's "age-1" gene lengthen the worm's life span, a species-specific characteristic that this research indicates is under genetic control. Scientists studying aging in animals describe senescence in terms of the rate at which age-specific mortality, or mortality at any given age, increases as the animals get older. Age-specific mortality in animals increases exponentially with age at a rate that is characteristic for each species. (Other variables that affect life span are initial mortality and high overall mortality rates for a population.) This research indicates that the rate of increase in the age-specific mortality rate is under genetic control.

Because it is a relatively simple organism and because it is well-characterized genetically, *C. elegans* provides a useful model for studying cellular processes and gene function. Additional study of the "age-1" gene may shed light on how the product of this gene can effect such a profound change in lifespan and may lead to an understanding of the role of genetics in aging in humans.

GRANTEES ESTABLISH MOLECULAR GENETIC BASIS OF ABO BLOOD GROUP SYSTEM

In work supported by NCI, scientists at the Biomembrane Institute and University of Washington, Seattle, have unraveled the molecular basis underlying the A, B, AB, and O blood groups

that are the basis of blood typing for transfusion.

Three genes, designated A, B, and O, determine blood type. As the work of these researchers now confirms, the enzymes encoded by the A and B genes convert a precursor "H" carbohydrate antigen to an A or B antigen, respectively. The O gene encodes an inactive enzyme, so the H antigen remains unaltered.

Drs. Fumi-ichiro Yamamoto, Senti-roh Hakomori and colleagues used a probe for the A gene to screen cDNA libraries from cell lines taken from people of different blood types. They found that the gene conveying the "B" blood type is similar to the A gene except for four base substitutions. The four substitutions result in four amino acid substitutions in the encoded enzyme. The "O" gene has one base deletion in comparison with the A gene. The deletion shifts the reading frame of the DNA. As a result, the O gene encodes an entirely different and inactive enzyme.

Further study of blood group genes may offer clues to how they evolved and are evolving still. Also, the expression of the genes changes during cell differentiation and in cancer development, and study of the blood group system may provide information on these processes.

COMPUTER PROGRAM USES MOLECULAR SHAPE TO SEARCH FOR AIDS DRUGS

NIGMS grantees have developed a new technique for identifying compounds that may help treat AIDS. Using a computer program called "DOCK," Dr. Irwin Kuntz, Jr. and colleagues at the University of California-San Francisco can search the structure of a particular molecule, without preconceptions based on chemistry alone, for a shape or shapes that will fit

into grooves in the molecular surface. Such grooves are usually the site of a molecule's chemical activity and, if another molecular structure can be fitted into it (rather as a key fits a lock), the activity can be blocked.

Using DOCK, Kuntz's group examined the structure (recently determined by other researchers) of a key HIV protein known as a protease. If the action of the protease is blocked, the virus cannot replicate and its infectious activity stops.

The UCSF team used DOCK to define the shape of the protease grooves. Then they searched for compounds with that shape by using a database containing the structures of 60,000 molecules. The database identified haloperidol, a common anti-psychotic drug, as a possible fit for the protease groove. Unfortunately, haloperidol is not effective against HIV unless the drug is used in doses that greatly exceed the lethal limits for human beings. For this reason, haloperidol is only a starting point for Kuntz and other UCSF researchers in their efforts to use the techniques of structural biology to design anti-AIDS drugs. The scientists are now making changes in haloperidol's structure that they hope will preserve the desired activity while lessening toxicity.

TRANSGENIC MICE PRODUCE SICKLE HEMOGLOBIN; MAY PROVIDE ANIMAL MODEL OF SICKLE CELL DISEASE

NIH grantees have made transgenic mice that produce human sickle hemoglobin. Scientists supported by NHLBI, NICHD, and NCI—Drs. Thomas M. Ryan and Tim M. Townes at the University of Alabama at Birmingham, Drs. Toshio Asakura and Ralph L. Brinster at the University of Pennsylvania, Philadelphia, and Dr. Richard D. Palmiter at the University of

Washington, Seattle—injected human genes for sickle hemoglobin into fertilized mouse eggs. The mice that had incorporated the human genes—and that as a result made human sickle hemoglobin—were crossed with mice that had beta thalassemia, a form of anemia which impairs the animals' ability to make normal mouse hemoglobin. With levels of mouse hemoglobin in the hybrid mice reduced, most of the red blood cells of the hybrid mice became sickled when the oxygen supply was lowered. The animals developed signs of moderate anemia, but not as severe as seen in patients with sickle cell disease.

The transgenic mice developed in this research are the closest approach to date to an animal model of sickle cell. Studies are under way to determine whether these animals develop the tissue and organ damage characteristic of sickle cell disease. The mice will be an important tool for studying the effects of sickle cell anemia and for evaluating new treatments.

This material was compiled by Charlotte Armstrong, Office of Communications, OD.

Executive Director Sought for NIHAA

The NIHAA is seeking an executive director to direct its day-to-day operations. Responsibilities include financial management, fund raising and membership. NIH scientific/administrative experience desirable. Call Cal Baldwin (301) 949-1697. Harriet Greenwald, current executive director, will continue as Editor of *NIHAA Update*.

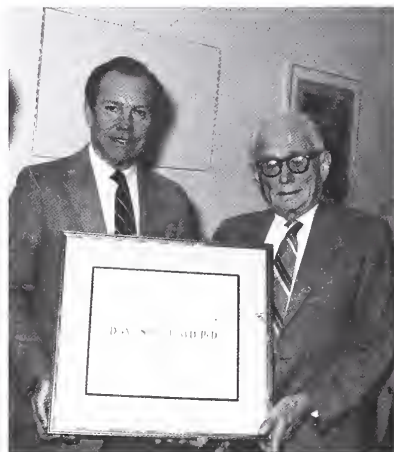
Stetten (continued from p. 1)

In 1934, Stetten took his M.D. degree at the College of Physicians and Surgeons of Columbia University, after which he did his internship and residency at Bellevue Hospital in New York City. There he first encountered another NIH luminary, James A. Shannon, who enjoyed a reputation as something of a genius as a visiting physician on Bellevue's renal service. Stetten returned to Columbia to take a Ph.D. in biochemistry under Rudolf Schoenheimer in 1940. At this time very little was known about the fate of particular atoms and larger molecular parts of various metabolites in terms of interconversion with other types of substances in the animal body. Stetten pioneered with Schoenheimer in utilizing the stable, heavy isotopes of nitrogen and hydrogen N^{15} and D to demonstrate the dynamic relationship between molecules of various fatty acids and cholesterol, choline and ethanolamine, choline and phosphatides, glycogen and galactose, and inositol and glucose. His dissertation research, which was published as two papers in the *Journal of Biological Chemistry*, utilized the then-new technique of labeling isotopes and examined the biological interconversion of fatty acids. The following year he married a fellow graduate student, Marjorie Roloff, known as "Marney," thus launching a scientific and domestic partnership that spanned more than four decades, until her death in 1983.

From 1938 to 1947, Stetten taught biochemistry at Columbia University, after which he moved for 1 year to Harvard University. The war years brought a variety of students to Columbia. One of these was Juan Salcedo, who later eliminated the nutritional disease beriberi from Bataan province and went on to hold numerous high scientific offices in the Philippines. At Harvard, Gordon Tomkins, who later became chief of the Laboratory of Molecular Biology,

NIAMD, enrolled in Stetten's course on the clinical aspects of biochemistry, a decision that contributed to Tomkins's decision to make a career in biochemistry.

From 1948 to 1954, Stetten served as chief of the division of nutrition and physiology of the Public Health Research Institute of the City of New York, a period he described as one of the most productive of his life. His laboratory also attracted a number of postdoctoral fellows, including another future NIH director, James Wyngaarden.



Dr. James B. Wyngaarden (l) poses with Dr. DeWitt Stetten Jr. when Stetten retired officially on Jan. 1, 1986, and was named NIH deputy director for science, emeritus.

Among his achievements during this period, Stetten elucidated the physiology of gout, showing that patients with gout produce abnormally large amounts of uric acid, the accumulation of which is the cause of all clinical physical difficulty. For his research during this period, Stetten was honored with election to the National Academy of Sciences.

In 1954, Stetten came to NIH as associate director in charge of research at what was then called the National Institute of Arthritis and Metabolic Diseases (NIAMD). He served in this

capacity until 1962. During this period he was coauthor on early editions of a standard textbook, *Principles of Biochemistry*. As NIAMD intramural director, Stetten recruited a number of young scientists to Bethesda, including the intramural program's first Nobel laureate, Dr. Marshall W. Nirenberg. Dr. Joseph E. Rall was not only recruited by Stetten but also stayed to follow in his mentor's footsteps, first as intramural director of NIAMD and later as NIH deputy director for science. During this period, Stetten also contributed to the establishment of the Foundation for Advanced Education in the Sciences, Inc., and later served as its president.

From 1962 until 1970, Stetten served as first dean of the Rutgers University Medical School, returning to NIH in 1970 as director of the National Institute of General Medical Sciences. Among the programs sponsored by NIGMS during his tenure were the Medical Scientist Training Program, which underwrote the educational costs of M.D.-Ph.D. students who planned to make a career in research, and the establishment of eight genetics centers across the nation, which maintained a bank of cell lines representing genetic defects and sponsored basic and clinical programs for the identification of genetically transmitted diseases.

In 1974, Stetten assumed the position of NIH deputy director for science. He served during this time as chairman of the recombinant DNA advisory committee. In response to concern within the scientific community about potential dangers in biotechnology research, this committee drafted guidelines for scientists using the new techniques. One drawback to moving to Bldg. 1, Stetten always believed, was that the scientific director often found himself isolated from the research he hoped to foster. To counter this, he established a Friday morning seminar series devoted

exclusively to the presentation of laboratory and clinical research activities.

In 1978, Stetten asked to be relieved of his duties as deputy director because of deteriorating eyesight caused by macular degeneration, and Dr. Donald Fredrickson, then NIH director, appointed him senior scientific advisor to the director. From an office in Stone House, Stetten took up a number of new projects. He wrote a widely cited letter to the editor of the *New England Journal of Medicine* suggesting that ophthalmologists learn more about advising their visually handicapped patients on services available for the blind. Some years later, the Library of Congress recognized his efforts on behalf of blind and low vision people by asking him to pose for a poster promoting its Talking Books program.

In another project, undertaken with William T. Carrigan, Stetten edited a book on the NIH intramural program, *NIH: An Account of Research in Its Laboratories and Clinics*. He also founded the Museum of Medical Research at NIH, which was established during the NIH Centennial observance and which bears his name. In the museum's collection is a gavel made by Stetten for NIH Director Robert Q. Marston and passed to his successors. An avid woodworker, Stetten had made the gavel on his own lathe. For the head he used wood from the plane tree found on the Aegean island of Cos and associated with Hippocrates, the father of medicine. The handle was made of American cherry wood. Among his many awards and honors were the Banting Medal from the American Diabetes Association, DHEW Superior Service and Distinguished Service awards, honorary doctorates from Washington University and from the College of Medicine and Dentistry of New Jersey, and the presidency of the Society for Ex-

perimental Biology and Medicine.

"To me, Hans was the epitome of the modern biomedical leader who embodies excellence in scholarship, in academic teaching skills and administrative acumen, and in humanistic sensitivity," said Dr. Philip S. Chen Jr., NIH associate director for intramural affairs.

"I think his heart really lay with the intramural part of NIH," Chen continued. "He leaped at the chance to become deputy director for science in 1974 when (then director) Bob Stone offered him the job. He had been a scientific director at the arthritis institute and this post allowed him to maintain a close finger on the pulse of the scientific directors.

"It was at this time that he instituted the Friday morning seminars, which were an honored forum for scientists to tell about their work. He continued that tradition even after he stepped down in 1979." The last of the seminars was held June 1, 1990.

"To me, Hans was the epitome of the modern biomedical leader who embodies excellence in scholarship, in academic teaching skills and administrative acumen, and in humanistic sensitivity."

—Dr. Philip S. Chen Jr.

Bobbi Bennett, NIH special assistant for scientific information, attended those sessions regularly.

"I was privileged to attend Dr. Stetten's weekly seminars for 10 years and hear the best and brightest in-

tramural scientists describe their research," she said. "It was a fantastic education. Dr. Stetten considered these seminars the best part of his week, and so did I. The speakers came because of their respect for him.

"Dr. Stetten combined brilliance with compassion and gentleness," Bennett concluded. "He was the ideal physician, scientist, teacher and human being."

Commented Dr. Joseph E. Rall, NIH deputy director for intramural research, "Dr. Stetten hired me 35 years ago and has been mentor, friend and colleague ever since. Hans Stetten has been the paradigm of distinguished scholarship and humanitarianism. The NIH has benefitted from his wisdom and insight for over three decades and we shall miss him deeply."

Regarding Stetten's nickname, Chen explained: "The name Hans originated with a German housekeeper that the Stetten family had for many years. She called him Hansel and called his sister Gretel. The name stuck."

Concluded Chen, "He had a very broad knowledge of science generally, and an encyclopedic knowledge of biomedical areas. Basically he was a very highly respected, approachable, wise person. His counsel was widely sought. And accepted."

Stetten is survived by his wife, Jane Lazarow Stetten; four children of his first marriage: Dr. Gail Stetten of Baltimore, Dr. Nancy Stetten of Nashville, Mary Stetten Carson of New York City, and George Stetten of Syracuse, N.Y.; two stepsons: Dr. Paul Lazarow and Dr. Normand Lazarow; and eight grandchildren: Elizabeth and Alex Maloney, Anna and Joseph Einstein, Magdalin and Matthew Carson, and Amy and Wendy Stetten.

A memorial service was held Oct. 29 in Lipsett Amphitheater, Bldg. 10.

Gene Therapy (continued from p. 1)

About two ounces of the patient's own genetically repaired cells, suspended in saline solution, were reinfused intravenously to the patient—a 4-year-old girl diagnosed with adenosine deaminase (ADA) deficiency.

ADA deficiency is a rare, genetic disease that severely cripples the immune system, leaving patients vulnerable to serious infections. Less than 10 children a year in North America are born with the disease, which often results in death in the first years of life.

The patient was awake and mobile during the treatment, which took about 30 minutes. The therapy is the first of several periodic treatments the patient will have in the next 6 months to a year. Eventually, NIH researchers hope patients will be able to receive the gene treatments at their home hospitals.

No outward physical results of the treatment are expected to be evident for several months; however, periodic blood samples from the patient will measure the amount of repaired cells circulating in the patient's body and will give researchers a wide representation of what infections the blood cells have to fight against during a typical year.

"We would hope that we'll begin seeing effects of the gene's modified cells in the first year," said Blaese, who has made his career taking care of children with severe immune disorders.

"I certainly don't expect to tell you next week that this treatment is a roaring success," he cautioned. "It's not designed to give answers within a week. It's designed to help us for a long period of time."

"We really feel a very large burden on our shoulders," Anderson said, answering questions at a press conference held the day before the treatment was scheduled.

One reporter asked him why the investigators decided to infuse so few



Announcing the gene therapy trial at a press conference on Sept. 13 are (from l) Dr. R. Michael Blaese, NCI, Dr. W. French Anderson, NHLBI, and Dr. Kenneth Culver, NCI.

"corrected gene" cells. Wouldn't more cells have produced a greater impact on the experiment? the journalist wanted to know.

"There have been critics who have said 'Why are you starting so soon?' and why are we going with a child?" Anderson answered. "It is imperative that we not do anything wrong or dumb or have it go badly."

He continued: "Our point of view is, it is more important to start very slowly so that we are ultrasafe than to move quickly ahead and then take the chance that something we did not anticipate would happen."

Put in perspective, the amount of cells reintroduced to the patient does seem small.

About 1 billion human cells—a tiny fraction of the body's total cells—were involved in this first stage of the trial, according to the third principal investigator, Dr. Kenneth Culver, a senior clinical researcher in Blaese's section.

"A drop in the bucket," he said smiling, as Anderson indicated with his thumb and forefinger the pellet-size amount of history being discussed.

Of course, the implications of the trial, much grander and more far-reaching than the tiny pellet of cells would indicate, were not considered lightly by the researchers.

"The technical ability to do gene therapy has been around for several years," Anderson said, addressing the

ethical issue—sometimes called "the Frankenstein concern"—posed by critics since gene therapy technology was initiated some 20 years ago.

He explained: "The concern has been that as soon as scientists and physicians, no matter how dedicated and how conscientious, begin to manipulate and engineer the blueprint of our lives—our genes, that concept is very disturbing."

Even during the press conference, one group of critics was silently making its concerns known.

Press releases from the Foundation on Economic Trends, a Washington D.C., think-tank, were neatly stacked beside gene therapy fact sheets on a table just outside the Bldg. 31A conference room where trial investigators fielded media questions.

"The NIH has brought us into the Brave New World of human genetic engineering," Jeremy Rifkin, foundation president, said in the release. "We are calling for a complete halt on future human gene therapy experiments until an advisory board on eugenics is established that will fully assess each proposed experiment."

"While there are many potential benefits of somatic gene therapy," Rifkin continued, "the technology has the potential of being misused and abused on a massive scale. The social and ethical impacts of human genetic engineering may be the most profound ever to

face humanity. They cannot be ignored by the NIH." Far from ignoring the ethical impact of the trial, Anderson recounted the numerous tests gene therapy in general, and this trial specifically, have had to pass before arriving at September's threshold of discovery.

"The review process was set up to give the public confidence that when gene therapy was finally attempted, it would not take place in some haphazard or random or rushed way," he said. "It was thoroughly reviewed over a long period of time by a large number of committees composed of very conscientious people who were looking for any possible problem.

"The reason it's taken us over 3 years to get approval is that a large number of people have done a very dedicated job," he said.

Anderson also emphasized the importance of animal research to the development of the gene therapy trial.

"Our goal is to devise treatment for incurable human diseases," he said. "Research with animals is critical for the success of that objective."

Anderson said the extensive approval process helped the public understand the importance and safety of the trial.

"I think the American public, from my interactions and from talking with groups, are comfortable and as excited as we are," he said. "What we hope for is that the procedure goes well and that this child and other children are ultimately helped."

What began in September in the arm of a 4-year-old could ultimately eliminate the world's most serious and devastating disorders, according to Anderson.

"The longer term implication, if this works, is that gene therapy might very well become a major new revolution in medicine," Anderson concluded. "This should provide cures for what are presently incurable diseases."

Why the Office of Scientific Integrity?

By Dr. Jules V. Hallum and Dr. Suzanne W. Hadley

It is a pleasure for us to introduce the Office of Scientific Integrity (OSI) to the members of the NIHAA. The OSI is a relatively new office, established in April 1989. In establishing the OSI, the PHS was expressing its concern for maintaining the high regard in which the American biomedical research enterprise had been traditionally held by the public. A few highly publicized cases of scientific misconduct were seen to have been damaging to the reputation of science. In an attempt to raise the public's perception of science and scientists, new research regulations were promulgated, taking into account the input of the scientific community. These research regulations, the so-called "Final Rule," contain several significant elements, three of which are important to this discussion.

The rule defines scientific misconduct as "fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting or reporting research." Specifically, misconduct does not include honest error or honest differences in interpretations or judgements of data.

The rule establishes the OSI and the Office of Scientific Integrity Review (OSIR) as two independent but complementary elements of the PHS effort for dealing with alleged and confirmed scientific misconduct.

The rule requires that any institution applying for or receiving PHS funds for research have in place policies and procedures, developed by the institution itself, to deal with alleged or suspected scientific misconduct. Institutions are required to submit an annual assurance to the OSI about their compliance with

this aspect of the Final Rule.

The OSI is best described by its responsibilities. It was established within NIH, but has PHS-wide authority, including CDC, FDA, HRSA, ADAMHA and NIH for both intra- and extramural research. The OSI has four major duties:

1. The OSI oversees implementation of all policies and procedures related to matters of possible scientific misconduct.

2. The OSI oversees each investigation into alleged or suspected scientific misconduct conducted by any institution applying for or receiving PHS research funds.

3. The OSI conducts inquiries or investigations, when necessary.

4. The OSI also participates in and directs preventive and educational measures to encourage the responsible conduct of research. As examples of this activity, the OSI is conducting a workshop for biomedical journal editors to determine ways in which the editors can interact with the OSI in matters related to suspected misconduct in scientific publications. In addition, a series of regional meetings are to be held this coming spring with institutional representatives to determine the institutions' experiences during the first year of implementation of the Final Rule.

How does the OSI work in cases of alleged scientific misconduct? Institutions are required to notify the OSI when, after an initial inquiry or fact-finding phase, a formal investigation will be undertaken. The OSI follows the investigation for thoroughness, fairness, objectivity and timeliness. Upon conclusion of the investigation, the OSI receives a full report on the institution's investigation citing the evidence, findings, and conclusions, and sanctions imposed, if any. The OSI reviews the

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Integrity (continued from p. 33)

report and decides if the findings of the investigation are fair and consistent with the evidence. If misconduct is confirmed, and the OSI agrees, the report is forwarded, together with any additional sanctions imposed by the OSI, to the appropriate agency director who then sends it to the OSIR for review. The OSIR, if it approves, sends the report to the Assistant Secretary for Health (ASH) for further review and decision.

If the OSI does not accept the findings of an institution's investigation, it can ask that the institution reopen the investigation, or the OSI can open its own inquiry or investigation.

The OSI can also open an inquiry or investigation following allegations made directly to the office. If an inquiry shows no evidence to warrant a formal investigation, the case can be closed at that time. If the inquiry demonstrates that there are facts to support an allegation that misconduct may have occurred, a formal investigation is initiated. The investigation is not simply an extended inquiry, but a formal process to determine if scientific misconduct did occur, and if so, how serious it was, and who was responsible. The same process is used within the PHS for allegations of scientific misconduct in extramural research.

In both inquiries and investigations, the OSI is specifically charged with protecting the rights of the complainant and the reputation of the respondent. It does this in two ways. First, all of the deliberations and reports of the OSI are kept in the strictest confidence. Only when a finding of misconduct is proved and sanctions are approved by the ASH does the final report become available to the public.

If the respondent is found not to have committed an act of misconduct, the OSI offers a choice. The final report can be kept confidential, secure from release under the Freedom of Informa-

tion Act, or, if the respondent wishes, perhaps because of media publicity, the OSI will work to help clear the respondent's reputation.

Most of us would like to believe that instances of scientific misconduct are rare, indeed. Whether or not this is true, it is recognized that even one case can have dramatic and costly impacts. At the present time, OSI is dealing with approximately 80 active cases. It has resolved 75 in the past 18 months. By resolving these cases in a thorough, fair and professional way, the OSI believes that it is participating as a partner in the scientific dialogue. That all of the members of the OSI professional staff are themselves scientists indicates the commitment of OSI in participating in this dialogue.

Scientists must recognize that they are in partnership with the OSI, sharing the responsibility for protecting PHS research funds. Universities must also share in this responsibility, because of their position as leading producers of both scientific research and researchers. The universities' responsibility to inculcate students in responsible research practices is a particularly crucial responsibility.

If partnership between the scientific community, the institutes and universities and the OSI is properly forged and maintained, it will provide a demonstration that science can indeed govern itself and thus help us to reestablish the high regard of science by the public and its representatives. The OSI is committed to this partnership.

Dr. Hallum is director of the Office of Scientific Integrity and Dr. Hadley is deputy director.

NIH Notes for June—October 1990

HONORS AND AWARDS

Dr. Samuel Broder, NCI director, received the Health Leader of the Year Award from the Commissioned Officers Association of the U.S.P.H.S. "in recognition of his outstanding contributions to the development of new treatments for both cancer and AIDS, through which he has touched and extended the lives of people throughout the world" ... **Dr. C. Marius Clore** of NIDDK's Laboratory of Chemical Physics was named 1990 Distinguished Young Scientist by the Maryland Science Center ... **Dr. Lois K. Cohen**, extramural program director at NIDR, was a special guest speaker at the University of Florida College of Dentistry when it dedicated the NIDR-supported Claude Pepper Center for Research on Oral Health in Aging ... **David S. Dwyer**, a management analyst in DRG, was named one of America's "thousand points of light" by President George Bush for his volunteer work as chief of the Bethesda-Chevy Chase Rescue Squad. Dwyer was also honored, a week later, as the recipient of one of 12 Volunteer Administrator Awards for 1990 from Governor Schaefer of Maryland ... **Dr. Anthony S. Fauci**, NIAID director, received honorary degrees from four educational institutions. The degree of doctor of science, honoris causa, was conferred on him during graduation ceremonies at Mount Sinai Medical Center, New York City; Georgetown University School of Medicine; Neumann College, Aston, Pa.; and Hahnemann University, Philadelphia, where he also delivered the commencement address to the graduate school and school of medicine. In addition, he delivered the commencement address to the Harvard Medical School class of 1990 ... **Dr. Carolyn A. Felix**, a biotechnology fellow in NCI's Pediatrics Branch, was the 1990 recipient of the American Society of Pediatric Hematology/Oncology's Young Investigator Award for her work in molecular genetics of lymphoblastic leukemia ... **Dr. Michael M. Frank**, NIAID's clinical director and chief of NIAID's Laboratory of Clinical Investigation, delivered the 1990 Jerome Glaser Memorial Lectureship on "Complement and Disease" at the annual meeting of the American Academy of Allergy and Immunology ... **Dr. George J. Galasso**, NIH

associate director for extramural affairs, was voted president-elect of the International Antiviral Research Society at its annual meeting in Brussels. This recognizes his longstanding involvement in antiviral research ... **Dr. Robert C. Gallo**, chief of NCI's Laboratory of Tumor Cell Biology, was one of eight scientists honored for outstanding achievements in laboratory science by the American Association for Clinical Chemistry. He was cited for pioneering the field of retrovirology and for discovering T-cell growth factor, or interleukin-2 ... **Dr. Igal Gery**, chief of the experimental immunology section, Laboratory of Immunology, NEI, received an unsolicited and unrestricted award of \$50,000 from the Alcon Research Institute to use in a research project ... **Dr. Ada Sue Hinshaw**, director of NIH's National Center for Nursing Research, was awarded an honorary doctor of science degree from Marquette University in Milwaukee. She was honored for emphasizing the work of nurse researchers and helping to shape the direction of the nation's health care policies ... **Dr. Arthur Jacobson**, an organic chemist in NIDDK's Laboratory of Medicinal Chemistry, was chosen for the J. Michael Morrison Award for outstanding contributions in scientific administration related to drugs of abuse ... **Dr. Michael A. Kaliner**, head of the allergic diseases section of the Laboratory of Clinical Investigation, NIAID, delivered the 18th Annual Clemens von Pirquet Lecture at Georgetown Medical Center. His theme was "Asthma in the 1990s: Translation of Pathogenetic Studies into New Therapeutic Strategies." He also received the Clemens von Pirquet Award for significant contributions to the field of allergy and clinical immunology ... **Dr. Ruth L. Kirschstein**, NIGMS director, received the 1990 Dr. Nathan Davis Award from the American Medical Association in recognition of her distinguished 34-year federal career as a researcher, manager and executive ... **Dr. Donald A. B. Lindberg**, director of NLM, was awarded an honorary doctor of laws degree from the University of Missouri at Columbia ... **Dr. Harald Loe**, director of NIDR, received an honorary doctor of humane letters from the University of South Carolina for his "accomplishments and dedication to excellence in education, research, and patient care in the field of dental medicine" ... **Dr. Karin Nelson**, a pediatric neurologist in the Neuroepidemiology Branch of NINDS, received the Weinstein-Goldenson Research Award given by the

United Cerebral Palsy Association for "opening up a new chapter in the epidemiology of cerebral palsy and other developmental disabilities" ... **Caroline Percopo** of NEI's immunology and virology section, Laboratory of Immunology, is one of five recipients of the 1990 Raymond W. Sarber Fellowship Award, granted to students for their exceptional research ... **Dr. Steven A. Rosenberg**, chief of NCI's Surgery Branch, was named 1990 Scientist of the Year by *R&D Magazine*, an international research and development publication, for his "distinguished work in adoptive immunotherapy and overall contribution to science and the advancement of knowledge" ... **Dr. Novera Herbert Spector**, health scientist administrator in the Division of Fundamental Neurosciences, NINDS, has been awarded the first Sergei Metalnikoff gold medal by the International Society for Neuroimmunomodulation (ISNIM). He was cited for his service as first president of ISNIM, for his outstanding research, and for his numerous seminal ideas leading to an explosion of new fundamental research in neuroimmunomodulation (NIM) ... **Dr. Earl R. Stadtman and Dr. Thressa C. Stadtman**, both members of the Laboratory of Biochemistry, NHLBI, were honored at a symposium in New Orleans on June 3. Each turned 70 this year and the alumni of their laboratory took the opportunity of celebrating their milestones by organizing a symposium entitled "Cellular Regulation" as part of the annual meeting of the American Society for Biochemistry and Molecular Biology and the American Association of Immunologists. They were two of the founding members of the intramural staff of the then National Heart Institute, arriving at NIH in Fall 1950. They are the only founding members of NIH still active at the bench at NIH ... **Dr. Stephen M. Weiss**, chief of NHLBI's Behavioral Branch, has been elected president of the International Society of Behavioral Medicine. He was president of the U.S. Society of Behavioral Medicine from 1984 to 1985.

APPOINTMENTS AND PERSONNEL CHANGES

Dr. Richard H. Adamson, director of NCI's Division of Cancer Etiology, has been appointed acting deputy director of NCI ... **Dr. Neil Buckholtz**, formerly executive secretary of the behavioral neurobiology study section in the Division of Extramural Activities, NIMH, has been

named a health scientist administrator for the Neuroscience and Neuropsychology of Aging Program. He will direct the treatment and management section of the Dementias of Aging Branch, which includes clinical trials of pharmacological agents in Alzheimer's disease and studies of behavioral and environmental interactions ... **Lucretia "Chris" Coffey**, who has worked in the federal government for 26 years with a background of EEO assignments, has joined the Division of Equal Opportunity and will serve as the Federal Women's Program manager. Her chief responsibilities will be directing, developing and evaluating NIH's Federal Women's Program. She will focus on matters pertaining to the employment stance of more than 6,000 women at NIH by developing policies and reviewing current practices affecting the employment of women ... **Dr. Marlene Cole** was appointed deputy director for operations of the Veterinary Resources Program, National Center for Research Resources ... **Dr. Janet M. Cuca** has been named NEI review and special projects officer, extramural collaborative programs ... **Dr. John W. Diggs**, director of the Division of Extramural Activities at NIAID since 1982, has been named NIH deputy director for extramural research, a position formerly held by Dr. Katherine Bick, who left NIH for private industry last March. In his new position, Diggs will direct the development and implementation of NIH policies and procedures for awarding funds for biomedical research and provide policy guidance for NIH components that make grants and contracts. The responsibilities of the Office of Extramural Research also include human subjects protection, animal welfare, research training policies, institutional liaison, invention reporting and coordination of research funding for small businesses ... **James Doherty**, information officer for DRS since 1982, has been chosen public affairs officer of NCRR, heading the Office of Science and Health Reports. NCRR was formed by a merger of the Division of Research Resources and Division of Research Services ... **Dr. Margaret Holmes**, who has been acting chief of NCI's Cancer Centers Branch, has been named the branch's permanent chief. She has been with the centers program since 1984 and at NCI since 1978 ... **Dr. Eric Juengst**, a philosopher specializing in the ethical dilemmas that can arise with advances in medical technology, has joined the National Center for Human

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Genome Research (NCHGR) to direct its efforts to anticipate the ethical, legal and social implications of human genome research. He comes to NCHGR from Pennsylvania State University college of medicine, where he was assistant professor of philosophy in the department of humanities ... **Dr. Rochelle M. Long**, an assistant professor in the department of pharmacology and toxicology in the school of pharmacy at the University of Maryland, has been named a program administrator in NIGMS' Pharmacological Sciences Program. She will handle research grants and predoctoral training grants in the area of pharmacology ... **Dr. Ernest Marquez** has joined the NIGMS Office of Review Activities as an executive secretary of the Minority Biomedical Research Support review subcommittee. He comes to NIGMS from Cambridge BioScience Corp., where he directed microbiology product development ... **Dr. Thomas D. Mays** has been named acting director of NCI's Office of Technology Development, which oversees legislation, rules, regulations related to NCI Cooperative Research and Development Agreements, employee invention reports, patents, licensing, and royalty income. Before coming to NCI, he was a primary patent examiner with the U.S. Patent and Trademark Office ... **Martha Pine**, NIGMS deputy executive officer since 1981, has been appointed executive officer for the institute. She identifies the institute's minority biomedical research and training programs as one of the areas she plans to emphasize over the next few years ... **Perry S. Plexico** has been named chief of the Computer Systems Laboratory (CSL), DCRT. CSL is the engineering arm of DCRT and Plexico is an electronics engineer. He came to DCRT in 1962 and since 1969 has been involved with CSL ... **Dr. Louise E. Ramm** has been appointed director of the Biological Models and Materials Program at NCRR ... **Dr. Michael Rogers** has been named deputy director of NIGMS' Pharmacological Science Program. In addition to his new position, he will continue to oversee grants involving bio-related chemistry ... **Dr. Stephen M. Rose** has been selected chief of the Genetics and Transplantation Branch of NIAID's Division of Allergy, Immunology, and Transplantation. He previously held the position of assistant professor, department of cell biology, at the University of New Mexico Cancer Research Center. His field of expertise is molecular immunology and

immunogenetics and his research focused on how chromatin structure affects the activation of immunoglobulin genes ... **Dr. John Ruffin**, dean of the college of arts and sciences and professor of biology at North Carolina Central University, Durham, has been named to the newly established position of NIH associate director for minority programs. In his new position, he will have overall responsibility for development and coordination of NIH activities to strengthen minority research and training programs, improve the effectiveness of all programs aimed at increasing minority participation in biomedical research, foster research related specifically to minority health issues, enhance the research capabilities of predominantly minority institutions and ensure effective participation of the extramural and intramural scientific communities in these matters ... **Kathy L. Russell**, deputy administrative officer in NCI's Division of Cancer Treatment, has left for her new post at Georgetown University, where she will work for NCI alumnus Dr. Marc Lippman. She will remain president of the board of directors of the Children's Inn at NIH ... **Dr. Gisele Sarosy** has been named chief of the International Cancer Research Databank Branch of NCI ... **Dr. Walter Schaffer** has joined the Office of Extramural Research, OD, to serve as research training and research resources officer ... **Dr. Mary Ann Sestili**, formerly the executive director of the Linda Pollin Foundation, and prior to that holder of positions in both program and review areas at NCI, has been appointed director of the Office of Review at NCRR ... **Dr. Charles R. Sherman**, assistant chief of the Planning and Policy Research Branch within the Office of Science Policy and Legislation, OD, has been named deputy director of the Office of Medical Applications of Research, OD. He will focus his efforts on evaluating the impact and overall effectiveness of the office's programs, including its consensus development conferences ... **Dr. Edward J. Sondik** has been appointed deputy director of NCI's Division of Cancer Prevention and Control. He had been serving as acting deputy director since September 1989. Earlier Sondik was associate director of the division's Surveillance Program ... **Dr. Peter Steinert** has been chosen to direct a new intramural laboratory at NIAMS to carry out basic research on the skin. The new Laboratory of Skin Biology will conduct fundamental studies that explore the nature and function of proteins responsible for the maturation of

the epidermis, the skin's outermost layer. From 1973 until 1989, when he joined NIAMS, Steinert worked in the Dermatology Branch of NCI ... **Dr. Mary Jane Stephens** has joined the NIGMS Office of Review Activities as executive secretary of the Minority Biomedical Research Support review subcommittee. She comes to NIGMS from the Food and Drug Administration, where she served as a senior staff fellow in the division of microbiology ... **Carol Tipperly** has been appointed NIGMS grants management officer. In this position, she will be responsible for the financial management aspects of all research and training grants assigned to NIGMS. Associated with NIH since 1963, she has previously worked for DRG, NICHD and NIA, where she was grants management officer from 1987 to 1990 ... **Dr. Jose Velazquez**, formerly chairman of the department of anatomy and cell biology at the Universidad Central del Caribe School of Medicine in Cayay, Puerto Rico, has joined the Minority Biomedical Research Support Program at NIGMS ... **Dr. Lorrinda Watson** has become a program administrator in the MBRS Program at NIGMS ... **Dr. Lon White**, chief of the Epidemiology, Demography and Biometry Program, NIA, will now head the newly established Asia-Pacific office in Honolulu to coordinate NIA's epidemiological research activities in Hawaii, the Pacific and Asia ... **Theresa Wilson** has left NIH after more than 31 years to accept a position as a scientific reviewer with the FDA. She began her federal service at NIH in the Clinical Center's clinical pathology department in Oct. 1958, as a medical technologist in the clinical chemistry service. In 1959, she became the supervisor of what is now known as the general chemistry group and later became involved in electrophoresis method development and evaluation. From that time to the present, she was supervisor of the electrophoresis group ... **Dr. Robert E. Wites** is returning to NCI to become chief of the Medicine Branch at NCI's Division of Cancer Treatment. He had been vice president for cancer research at Bristol-Myers Squibb. He joined the company in 1988. Prior to that he had been director of NCI's Cancer Therapy Evaluation Program from 1983 until 1988 ... **Dr. David A. Wolff**, formerly deputy associate director for program activities, NIGMS, has been appointed to head the Fogarty International Center's International Research and Awards' Branch. This branch is responsible for the manage-

ment of a number of research and research training programs, including international research fellowships for foreign scientists to conduct research at U.S. institutions, and senior international fellowships for senior U.S. scientists conducting collaboration research abroad. Wolff joined the NIH Grants Associates Program in 1978, and held a position at NIDR before joining NIGMS ... **Dr. Marian Zatz** has been appointed chief of the cellular basis of disease section of the NIGMS Cellular and Molecular Basis of Disease Program. She had been a program administrator in the section since 1984.

RETIREMENTS

Dr. Robert L. Bowman, chief of NHLBI's Laboratory of Technical Development, retired on June 1. He joined NHLBI in June 1950 as a senior assistant surgeon in the Laboratory of Technical Development (LTD). In 1956 he was named chief of LTD, a post he held until he retired. Among the best known instruments developed by Bowman was the spectrophotofluorometer. It enabled investigators to use fluorescent techniques in the study of biological compounds. An example is the work on neurotransmitters by Dr. Julius Axelrod, who utilized Bowman's instrument to do the work for which he won the Nobel Prize ...



Dr. David P. Rall (l) holds up poster signed by hundreds of NIEHS employees thanking him for his years of leadership as NIEHS director. Presenting the poster on behalf of the employees is Dr. David G. Hoel, acting director, NIEHS.

Robert L. Bunch, a supply technician and property manager at NIDR, retired after 36 years of government service, the last 27 of them with NIDR. He began working at NIH in 1953, and since then has held a variety of jobs ordering and cataloging supplies and equipment. His retirement plans include a

lot of fishing and he may expand his interest in sports into a second career by opening a sporting goods shop ... **Marjorie Price Casey**, secretary in NIDDK's Mathematical Research Branch, retired June 30, after 20 years of federal service. She joined NIDDK in 1974 as a "floater" working for the Laboratory of Biochemistry and Metabolism and the Laboratory of Chemistry. In 1975, she was offered a full-time position as secretary to the chief of the Mathematical Research Branch, where she remained until her retirement. Her retirement plans include volunteer work, painting and traveling ...

Norma L. Guenterberg, secretary to Terry F. Pechacek in NCI's Smoking, Tobacco, and Cancer Branch, retired Apr. 30 after 27 years of government service ... **Edna V. Jacobs Hill**, a biochemistry lab technician in NIDDK's Laboratory of Cellular and Developmental Biology, retired on June 3 after 32 years at NIH. She came to NIH in 1958 and worked in the Veterinary Resources Branch, Division of Research Services. In 1960, she joined NIAMD (now NIDDK) and worked there until her retirement. She has many interests that she hopes to pursue and also hopes to do more traveling and camping ... **Dr. Helen Lloyd** has retired after 39½ years at NIH. She came to NHLBI's Laboratory of Chemistry in 1951 in the USPHS as a senior assistant scientist under Evan Horning. She left for a short time and then returned to work in the Laboratory of Chemistry, NHLBI, now the Laboratory of Biophysical Chemistry. In retirement, she plans to move to Sequim, a peninsula in the state of Washington, where she has friends ... **Winnie Lumsden** retired after nearly 29 years of service in the federal government, most recently as NCI's committee management officer. Since December 1980, she has managed the institute's public advisory committees ... **Beatrice (Bea) McKinley**, senior administrative officer in the Management Services Branch of NIAID's Office of the Director, has retired after a 22-year career at NIAID. She will spend much time traveling ... **Helen G. Orem** retired June 1 from her position at the Clinical Center. She established the Clinical Center Art Galleries in 1987. The galleries offer the works of local artists for sale with a portion of the proceeds benefiting the Patient Emergency Fund. In 1984, she began the Clinical Center Art Program, which has flourished into a collection of permanent art. She began her career at NIH with the Medical Arts and Photography Branch, DRS. She left to raise her family and returned to

MAPB in 1974, where she worked until joining the Clinical Center in February 1987 ... **Dr. Kendall G. Powers**, a DRG health scientist administrator, retired after 42 years of active and reserve duty in the USPHS ... **Charles Pyles**, known as Charlie, has retired after 31 years in NIH's Security Division. Starting out as a guard, he moved into parking and traffic control, then security evaluation. For the past 3 years he has been working in the crime prevention section in the Division of Security Operations. In retirement, he plans to continue working for a private firm doing security surveys ... **Dr. David P. Rall**, director of the National Institute of Environmental Health Sciences since 1971 and also director of the National Toxicology Program since 1978, retired on Oct. 1. His retirement marks the end of an era during which NIEHS grew from a handful of employees housed in leased space with an annual budget of \$24 million, to a world center for toxicological research with 1,000 employees and an annual budget of more than \$230 million. Prior to his NIEHS appointment, Rall was associate scientific director for experimental therapeutics at NCI. Under his leadership, scientists at NIEHS laboratories as well as at college and university laboratories supported by institute grants and contracts have made major advances in understanding the toxicity of scores of hazardous substances, including the cellular and molecular mechanisms by which environmental contaminants cause illness. Rall was among those to initiate early studies of the hazards of halogenated aromatic hydrocarbons, a family of chemicals including PBB's, PCB's, dioxin and dibenzofurans. Major advances were made in the study of asbestos, vinyl chloride, diethylstilbestrol (DES), cadmium, mercury and lead, among many other examples. He was also instrumental in initiating and supporting landmark studies in the causes and health effects of air pollution. The National Toxicology Program has expanded its series of published technical reports and its archives are among the largest in the world and an invaluable resource for future toxicological studies. Rall has throughout his career been recognized for his leadership role with many awards and honors. He plans to return to Washington, D.C. While a search committee helps select his successor, Dr. David G. Hoel, director of NIEHS' Division of Biometry and Risk Assessment, will serve as acting NIEHS director ... **Barbara B.**

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Shepherd retired June 30 from her position as secretary to the Associate Director, Cancer Prevention Research Program, Division of Cancer Prevention and Control, NCI. She began her career at NIH in 1975. Her son William is an astronaut who just completed a second mission on the recent Discovery space shuttle flight ... **Calvin Waddell**, a computer clerk in the NIGMS Office of Data Management, retired recently after 40 years of government service, 23 of them at NIGMS. Waddell takes great pride in the home that he purchased in Washington, where he plans to spend his retirement working with senior citizens.

DEATHS

Dr. Sidney Blumenthal, 80, an educator, pediatric cardiologist and a former director of the Heart and Vascular Disease Division of the National Heart, Lung and Blood Institute at NIH in the mid-1970s, died of leukemia June 19 at the Columbia-Presbyterian Medical Center in Manhattan ... **Dr. Murray Bowen**, 77, a psychiatrist who was a pioneer in the use of family therapy to treat mental illness, died Oct. 9 of lung cancer at his home in Chevy Chase. He was on the staff of NIMH from 1954 to 1959 and during that time he was among the first to treat the family unit instead of the individual. After he left NIH he joined Georgetown University Medical Center where he developed and extended his theories about family therapy ... **Beverly B. Cox**, 65, who worked in the computer field at NIH, died of cancer July 7 at the Reston Hospital. In 1962, she joined the staff at NIH and she retired in 1983 ... **Anna B. Edelin**, 77, a retired NIH grants administrator, died Aug. 27 at Shady Grove Adventist Hospital after a stroke. She worked at NIH from 1965 until retiring in 1980 ... **Stanley I. Hirsch**, 74, former chief of NIMH's social services section, died of cancer June 17 at his home in Silver Spring. He had served 30 years in the PHS Commissioned Corps and held the rank of captain. Following his retirement from NIMH in 1981, he served as a guest worker there until shortly before his death. He had joined NIH in 1955 to become chief social worker in the Clinical Center. In 1956, he was named chief of NIMH's social work department. In 1974, he was made patient recruitment coordinator, NIMH. During his years at NIH he was active in the Hamsters Theatre and worked as a volunteer for CFC and Savings Bonds campaigns ... **William**

Isaac Lourie Jr., 73, a retired health statistician at NCI, died of complications from a brain tumor Sept. 19 at the Hebrew Home of Greater Washington in Rockville. He came to Washington in 1940 to work for the Census Bureau as a statistician. During World War II, he served in the Army in the Pacific and twice received the Bronze Star. In 1946, he joined NCI and retired in 1985 ... **Dr. Stevan Milkovic**, 67, died in Zagreb, Yugoslavia, in December 1989 of cancer. In 1969 he came to NIH as a NIH International Postdoctoral Fellow. He worked with Dr. Robert Bates in the endocrinology section of the Laboratory of Nutrition and Endocrinology, NIAMD. Besides continuing his work in fetal endocrinology, he collaborated with Bates on the effects of transplantable mammary tumors in rats. He published extensively while at NIH and became well-recognized internationally as an authority on the endocrine aspects of fetal development in experimental animals ... **Dr. Margaret K. Deringer Barrett Miller**, 74, a retired research biologist at NCI, died of kidney failure Aug. 12 at Suburban Hospital in Bethesda. In 1942, she joined the staff of NCI as a research fellow. She retired in 1980 as biologist in the registry of experimental cancers, but after retirement she had continued to do research at the American Institute for Cancer Research ... **Dr. Lot B. Page**, 67, former chief of the Cardiovascular Aging Program at NIA, died of prostatic cancer Aug. 29 at his home in Lincoln, Mass. He worked at NIH from 1985 until 1989, when he became chief of medicine at the Manchester Veterans Medical Center in Manchester, N.H. ... **Dr. Cephas Taylor Patch**, senior investigator in the Intramural Research Program, NICHD, died of cancer July 16, just a few weeks after he had retired. He came to NIH in 1968 as a staff fellow with NIAID and then he was with NCI from 1971 until 1982, when he joined NICHD ... **Gilbert Dean Press**, 59, former budget officer for NIDR, died June 30 of a heart attack. He had more than 30 years of government service when he retired in May 1988. He began his government career in 1955, when he joined the General Medicine Branch at NCI as a medical biology technician. Six years later he advanced to a position as a chemist in what was then NHI and a reassignment in the mid-1960s sent him to NICHD's Gerontology Branch in Baltimore. In 1973 he was accepted into the Management Intern Program and from there he went to the NIDR budget office, where he was eventually promoted to

budget officer ... **George E. Presson**, former executive officer of the Fogarty International Center since its inception in 1968, died July 2 at Fairfax Hospital in Falls Church, Va. Before coming to FIC, he headed the management operations section of the Office of International Research. As executive officer at FIC, he designed and implemented the Fogarty Center's administrative management programs. He also formulated a series of guidelines for international conference procedures. He retired after 39 years of government service ... **Dr. Robert L. Ringler**, 68, a retired NIH official, died of cancer Aug. 16 at his home in Big Rapids, Mich. He began his career with NIH in 1961 as a scientist administrator with the National Heart and Lung Institute. In 1969, he was appointed the institute's deputy director. During his last 5 years with NIH, before retiring in 1983, he was deputy director of NIA ... **Dr. Stanley J. Sarnoff**, 73, founding director of a heart research laboratory at NHI and who later started Survival Technology, a health care company, died of heart ailments May 23 at University Hospital in Salt Lake City, Utah, where he had gone for medical treatment. In 1954, he helped set up The Laboratory for Cardiovascular Physiology and he directed it for 10 years. He conducted research on the heart and the circulatory system and had a research fellowship program. In 1964, he resigned and started Survival Technology to make and market an automatic syringe he designed that allows patients to inject themselves. Different ones were produced for heart patients or patients with various allergies. The company also supplied the Army with syringes containing an antidote for nerve gas. The company's other products included monitoring equipment for heart patients. He held more than 40 patents and in 1980, he founded the Stanley J. Sarnoff Endowment for Cardiovascular Science, Inc., to provide research fellowships for medical students ... **Dr. James Allen Scott**, 92, a retired research grants official at NIAID, died of kidney failure Aug. 18 at his home in Bethesda. He was an authority on helminthology. He joined NIH in 1962 and was chief of parasitology and medical entomology in the extramural programs at NIAID. He was also a member of NIH's graduate research training grants committee. He retired in 1972 ... **Betty Smith Spaugh**, 67, of DRG, died Aug. 14 ... **Dr. DeWitt "Hans" Stetten Jr.**, 81, NIH deputy director for science, emeritus, died Aug. 28 of congestive heart failure, see story on page 1 of Update.

Japanese Embassy Hosts Gala NIHAA Reception

On Friday, Oct. 19, the NIH Alumni Association hosted a very successful reception at the Japanese Embassy. The party, attended by NIHAA members, guests, Japanese officials, embassy personnel, and Japanese scientists at NIH, was held at the lovely and historic old ambassador's residence on the grounds of the embassy.

As part of the reception former NIH director Dr. James B. Wyngaarden was

honored. His birthday was celebrated with a gift of photos showing the sculptures that were installed at NIH during his tenure. The guests were welcomed and greeted by Minister Hiroshi Hirabayashi, Embassy of Japan, and Vice Minister Isao Hokugo, Ministry of Health and Welfare Department of Japan.

The reception also honored the Japanese scientists at NIH. Three

Japanese firms that helped by contributing to the event were: Fujisawa Pharmaceutical Co., Ltd., Otsuka America Pharmaceutical, Inc., and Japan Express Travel. The setting, the camaraderie and the food all came together to make for a very memorable affair.

Photos: Bill Branson



Welcoming guests at party were (from l) Minister Hiroshi Hirabayashi, Embassy of Japan; Dr. James B. Wyngaarden, former NIH director; Dr. Diane Wallace Taylor, Georgetown University, Department of Biology; and Dr. Gordon Wallace, NIHAA president.



Vice Minister Isao Hokugo, Ministry of Health and Welfare Department, Japan, greets guests at the party.



Dr. Gordon Wallace presents a gift to former NIH director Dr. James B. Wyngaarden at a birthday reception held in his honor. Looking on is Harriet Greenwald, executive director of NIHAA and editor of *NIHAA Update*.



Dr. and Mrs. Vaman S. Waravdekar stand before one of the paintings at the old ambassador's residence, Embassy of Japan.



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NIHAA UPDATE

If You Are Not Yet A
Member Of The NIHAA
[Clip and mail]

NIHAA Office
9101 Old Georgetown Rd.
Bethesda, MD 20814

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

(Title) (Organization)

from _____ to _____ My membership dues of \$ _____
(Years)

are enclosed payable to FAES/NIHAA.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment if applicable: _____

Mailing Address: _____

City, State, and Zip Code: _____

Telephone: _____

If you joined and have not returned
your dues renewal notice, please do
so as soon as possible.

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are welcome.

Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at NIH.

Present NIH staff are invited to join as associate members.

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Julius Axelrod: Portrait Of a Late Bloomer

By Rich McManus

Forty-one years ago, a man who would later go on to win a Nobel prize arrived at NIH with relatively slim prospects for achieving distinction.

Back then, lacking a Ph.D., he was a longshot candidate for success. Today, he concedes resignedly, a man like him wouldn't have a prayer at NIH.

"There are no opportunities in science for a late bloomer now," says Dr. Julius Axelrod, a guest researcher at NIMH's Laboratory of Cell Biology and winner of the 1970 Nobel Prize in physiology or medicine.

"There are a lot of people who mature slowly, and they just don't have a chance," he observed. "You have to have a fast start today—the best schools, the best grades, the best fellowships—or you won't get into the system. I was a good but not outstanding student. Opportunities came and I just made the right choices."

(See *Axelrod* p. 14)



Dr. Julius Axelrod has, in 41 years at NIH, seen various institutes rise, pioneered in the chemistry of the nervous system and in drug studies, trained scientists, won the Nobel Prize, and, lately, immersed himself in signal transduction research.



Dr. Bernadine P. Healy, formerly of Ohio's Cleveland Clinic Foundation, has been named NIH's 13th director, a position open since August 1989.

Healy Confirmed As Thirteenth NIH Director

By Carla Garnett

On March 21, the Senate confirmed the nomination of cardiologist Dr. Bernadine P. Healy, 46, as NIH's 13th director. She is the first woman to hold the position of NIH director, a post widely regarded in the nation's scientific community as the president's top biomedical research appointment.

Newspapers reported several months ago that DHHS secretary Dr. Louis W. Sullivan had chosen Healy for the job; President Bush officially announced his intention to nominate her Jan. 9.

"Her nomination is good news indeed, and bodes well for the future of the NIH," said Dr. William Raub, who has served as NIH's acting director since August 1989, when Dr. James Wyngaarden resigned.

Healy, who served as an NHLBI staff fellow here from 1972 to 1974, would re-

(See *Healy* p. 2)

First Cancer Patients Get Gene Therapy

By Florence S. Antoine

A team of NIH scientists led by immunotherapist and surgeon Dr. Steven A. Rosenberg of NCI treated the first cancer patients in a human gene therapy trial Jan. 29.

Two patients received transfusions of special cancer-killing cells removed from their own tumors and armed in the laboratory with a gene capable of producing a potent antitumor toxin, tumor necrosis factor (TNF).

"This trial will be the first to apply gene therapy to cancer, which, in its many forms, affects millions of people," Rosenberg said.

The cancer-killing cells removed from the patient's tumor are tumor-infiltrating lymphocytes, or TILs, that have migrated from other parts of the body to the cancer site. These cells invade the tumor and may have the ability to recognize and destroy tissue from this tumor that has spread to distant parts of the body.

(See *Gene Therapy* p. 13)

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turn to NIH from Ohio's Cleveland Clinic Foundation, where she has served as chairman of the Research Institute since 1985. Recently, she has served on several NIH advisory groups including the 1988 panel that debated the use of fetal tissue in federal biomedical research.

Dr. Harvey Klein, chief of the Clinical Center's transfusion medicine department and former Healy associate, also praised the new director. He was a first-year resident with the Osler Medical Service at Johns Hopkins when Healy interned there 1970 to 1971.

Klein said what he remembers most about Healy was her dedication to her patients. "She was extremely conscientious," he said, recalling that Osler interns were required to complete one of the most difficult internships in the country.

"They were supposed to be immediately available, literally all the time," he said. "She was a great favorite among her patients and frequently came in to care for them on her rare time off."

As NIH director, Healy, a 1970 graduate of Harvard Medical School, joins three former classmates already established at NIH—Dr. Michael Gottesman, chief of NCI's Laboratory of Cell Biology; Dr. Herbert Morse, chief of the Laboratory of Immunopathology at NIAID; and Dr. Eric Ottesen, chief of the clinical parasitology section in NIAID's Laboratory of Clinical Investigation.

Gottesman said: "I am delighted that Dr. Healy will be returning to NIH. NIH has done well by our class and we're looking forward to a reunion."

Before directing the Cleveland Clinic Foundation, Healy served as deputy director of the Office of Science and Technology Policy at the White House 1984-1985. From 1977 to 1984 she directed the coronary care unit at Johns Hopkins. A New York City native, Healy graduated from Vassar in 1965.

Stetten Museum Acquires Van Slyke Apparatus

In April the DeWitt Stetten, Jr. Museum of Medical Research will place an original Van Slyke manometric apparatus in the lobby area of the Claude Pepper Building conference center (Bldg. 31, 6th floor). The exhibit will include a brochure that traces the history of this instrument.

Named after the famed chemist Donald Dexter Van Slyke, this instrument, developed in the 1920's, is one of the first devices that successfully integrated modern chemistry with the practice of medicine. As a clinical and research tool, it was distinctive in its versatility, simplicity, and accuracy as a quantitative instrument.

Until the advent of electronic, automated analyzers, which emerged in the 1960's, the Van Slyke manometric device was found in almost every clinical laboratory. Subsequently, however, most of them were destroyed. The instrument in this exhibit was donated to the Stetten Museum by Dr. Rollin Hotchkiss, formerly of the Rockefeller Institute (now Rockefeller University).

To mark the exhibit's opening, Dr. Hotchkiss will give a seminar on research at the Rockefeller Institute during the period of widest use of the Van Slyke apparatus. For more information about his seminar, call Dennis Rodrigues at the Stetten Museum offices, (301) 496-6610.



Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit materials.

Editor's Note

The NIHAA Update, is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

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NIHAA Forum

Zeal in the Office of Scientific Integrity

By Dr. Bernard D. Davis

Since administrators naturally wish to protect their institutions from embarrassment, it is not surprising that they have often been reluctant to respond to allegations of fraud in research. We are now paying a price, as congressional investigations have led to exposure of a substantial number of cases of fraud—more than most scientists would have expected. The increase might only reflect better detection—though it would not be surprising if the frequency had also risen, since standards of integrity have declined conspicuously in our culture (including the highest levels in our government). Nevertheless, the recognition of even a dozen or two cases of fraud, among the 24,000 grants supported by the NIH, does not seriously undermine confidence that the great majority of scientists have extreme concern for scientific integrity, on which their whole enterprise depends.

While this confidence seems to be generally shared by scientists, some legislators have evidently been convinced of a more serious crisis in science. In response to their criticism the Department of Health and Human Services established two new offices: the Office of Scientific Integrity (OSI) in the NIH, and a supervisory Office of Scientific Integrity Review (OSIR) in the department. The latter office not only sets policy but also makes the final decision on the investigated cases.

Since these new offices may significantly affect the future style of research and the relations between scientists and the NIH, they deserve close scrutiny. I shall discuss three aspects of the problem: the effects of dividing the responsi-

bilities between two offices; their very broad mandates; and the zeal of their present administration.

On the matter of structure: while it was obviously necessary to strengthen the mechanisms at the NIH for dealing with fraud, the existence of two offices, for a function that could well be performed by one, wastes both money and time. Moreover, the more elaborate the offices, and the machinery that they require in research institutions, the greater the expenditure. Indeed, since the initial congressional inquiry into fraud was based on the legislators' obligation to prevent waste of taxpayers' money, it would be interesting to compare the cost of the present extensive machinery and activities with the savings.

In addition, if mechanisms for dealing with fraud have the goal of improving the research enterprise, they will not be effective if they are simply imposed as a policing action; they must have the cooperation of the concerned scientific community. The HHS office, lacking the broad connections of the NIH with that community, seems unlikely to be helpful in achieving this goal.

A final comment on the structure of the offices: subordinating the OSI to the OSIR makes the position of its director less effective and less attractive. Moreover, this decision further diminishes the waning authority of the director of NIH—an unfortunate trend in recent years whose negative impact on the attractiveness of that office, and on the status of the institution, is widely recognized.

More important than the structure of the new offices is the second problem, their broad mandate. The groundwork was laid early in the discussions of fraud, when the NIH insisted, on debatable legal grounds, that the term "fraud" must be replaced by "misconduct." Moreover, this term was defined to include not only falsification, fabrication, and plagiarism, but also "practices that deviate seriously from



Dr. Bernard D. Davis

those generally accepted." The Public Affairs Board of FASEB vigorously opposed the change, on the grounds that the term misconduct, and even more the concept of generally accepted practice, are too open-ended in this context. But we lost. Somehow, the old-fashioned term "dishonesty" never got into the act. As George Orwell has taught us, language is important in politics—and "misconduct" has turned out to be an invitation to an ever-expanding scope of government involvement.

The resulting mandate charges the new offices not only with monitoring and conducting investigations of misconduct: they should also "promote high standards of laboratory and clinical investigations in science through a prevention and education program." This phrase is fraught with possibilities for encouraging the government to mix problems of misconduct with problems of quality in the conduct of research. And even though the government may enter this area with the wish to be a beloved teacher in a noble cause, its structure inevitably makes its hand heavy.

This is the heart of the problem. The government already has strong and appropriate leverage over quality through
(See *Integrity* p. 4)

Integrity (continued from p. 3)

the granting mechanism. In addition, it can legitimately investigate and punish fraud. But it is another matter for the government to become involved in pursuing less weighty (and more widespread) faults of scientists such as carelessness, bad judgment, and improper assignment of credit. The need to discourage such behavior and to reward high standards is important, and it is a constant challenge—without expectation of perfect success—to the scientific community, including teachers, referees, editors, department chairs, deans, appointment committees, and granting committees. Moreover, we must concede that recent public attention has been useful in raising consciousness of our need to do better.

Nevertheless, because these problems are inevitably fuzzy and permeate research it seems extremely doubtful that they can benefit from rigid governmental regulations. In our legal system the police require a warrant before they can enter; and without it their presence is no more appropriate in the laboratory than in the bedroom—even when tax money supports the inhabitants.

My third concern is that the broad mandate of these offices is now being pursued with excessive zeal, rather than with restraint. This was originally only a theoretical possibility, but it is now an actuality. NIH training grants already require institutions to provide formal courses in research ethics; and while it is clearly desirable for preceptors to set examples and to engage in discussions that expose their trainees to the canons of ethical scientific behavior, obligatory courses may simply bore students of science, much like required courses in Marxism in some other countries.

An even larger expansion of government intervention is envisaged by the recently appointed director of OSI, Jules Hallum: at the annual meeting of the

American Society of Microbiology last May, he suggested that the definition of misconduct should be broadened to include sloppiness, because cutting corners is just as irresponsible as cheating. Moreover, a subsequent PHS document (8/1/90), describing the policies and procedures of the new offices, provided a further innovation: in addition to their own personnel they will require each PHS agency, and each fund-granting component, to designate a Misconduct Policy Officer. Since the OSI should have no difficulty in receiving information about grantees of any branch of the NIH, one must wonder whether the additional branch officers are needed as conduits for such information or are also expected to initiate searches for misconduct.

I conclude that the new offices have become grotesque in their evident aim of purifying science root and branch, without recognition that the cure could do more harm than the disease. This threat to science would seem to merit thorough reevaluation of the offices. Nevertheless, the scientific community has not reacted vigorously. However, a recent lawsuit by a defendant against the OSI has drawn attention to the problem in a way that should promote further discussion. The judge scathingly criticized the process by which the new offices established major new policies and procedures, without public review (*Science* 251:508, 1991).

This judgment will presumably result in publication of proposed policies in the *Federal Register*, inviting public comment. But this contribution of the law, with its traditional emphasis on procedure, will not solve the problem unless the substantive issues elicit comments from scientists on a large scale—whether in response to that publication or through other connections. The main issue is, of course, the need to balance pursuit of fraud with the preservation of an atmosphere that will continue to encourage creativity and boldness in research.

Though the NIH enjoys a respected and even affectionate relationship with the scientific community, it has not always been courageous in defending principles against political pressures. In an earlier era of red-baiting it refused (unlike some other government agencies) to award grants to such distinguished scientists as Linus Pauling and Elvin Kabat, because they were accused (without trial) of political misconduct. To be sure, that shameful action of the NIH does not provide a strong analogy for the OSI and OSIR, since it was based on phantoms, while these offices are addressing real problems. Nevertheless, their overreaction to political pressure is similar—and it threatens the welfare of science on a much broader scale.

Dr. Davis is professor emeritus of bacterial physiology at Harvard Medical School.

R&W Trip to Hawaii

A special trip arranged by the Recreation & Welfare Association of NIH to Hawaii is available to members of the NIH Alumni Association. The tour leaves Dec. 5 from Dulles Airport. The 9-day trip includes tours of Honolulu, a Polynesian luau, a city punchbowl tour, visits to Pearl Harbor and Maui, and a dinner show.

Enjoy the beauty of Hawaii and relax. Whether your pleasure is shopping, swimming, or relaxing in the sun, you are sure to have a wonderful time. Your professional tour guide will be there to assist you. The total price of this trip including airfare, hotels, 8 meals and insurance waiver is \$1,679. For further information, contact Kelly McManus or Randy Schools in the R&W office, (301) 496-6061.

News From and About NIHAA Members

Onie H. (Powers) Adams, who worked at the NCI from 1963 to 1967 as a chemist in the Cancer Chemotherapy National Services Center (CCNSC), writes that just before her retirement she was also "at the National Library of Medicine indexing journals for *Index Medicus* and the MEDLARS program." She is now living in Newtonville, Mass. Her husband died in January 1989.

Calvin Baldwin, former NIH associate director for administration and current NIHAA secretary-treasurer, has been appointed to the Bethany Beach, Del., town council. He and his wife, Betty, have a summer home in Bethany. They celebrated their 40th wedding anniversary in March in Bermuda, where they attended an Elderhostel program at the Bermuda Biological Station. The program was an historic and ecological survey of Bermuda and its oceanic environs. They enthusiastically recommend Elderhostel programs to other NIHAA members.

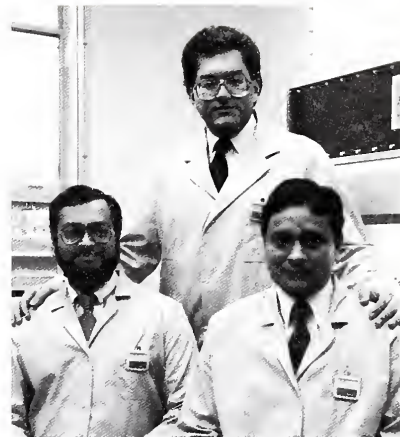
Dr. Samuel Baron was at NIAID from 1955 to 1975, when he retired from the Commissioned Corp, USPHS, and became professor and chairman of the



department of microbiology, University of Texas Medical Branch, Galveston. He is still conducting an active research program on host defenses during viral infection and on antiviral agents including interferon. He reports that within the medical school there are several former NIH'ers including Louese McKerlie, who retired from NIH in 1975, and left the department of microbiology in Galveston in 1985, but is still working in the laboratory there. Dr. Brad Thompson, formerly with NCI's Laboratory of Biochemistry, section of biochemistry and gene expression, has been in the department of biochemistry in Galveston since 1984. Dr. Bellur Prabhakar, who left NIDR's Laboratory of Oral Medicine in August 1990, became an associate professor in the department of microbiology.

Dr. Bahige Baroudy, who was at NCI's Laboratory of Molecular Oncology from 1982 to 1983, then in the Laboratory of Biology of Viruses from 1978 to 1982, and then in the Laboratory of Infectious Diseases from 1983 until 1985, is currently director of molecular virology at the James N. Gamble Institute of Medical Research in Cincinnati. He is continuing his research on hepatitis virus, particularly the hepatitis C virus. He loves Cincinnati, says the air is cleaner than in Bethesda, and notes that the parking is easy and there are now direct flights to Europe. He is still playing the violin and enjoys the Cincinnati Symphony Orchestra. He has been joined at Gamble by two other former NIH scientists: Drs. Girish Kotwal and Nafees Ahmad, both of whom left NIAID in 1990.

Dr. R. H. Belmaker reports that he was "a clinical associate at NIMH, 1972-74. I am now chairman of psychiatry, Ben Gurion University School of Medicine, Beersheva, Israel. My main research interest is manic-depressive illness and the biochemical mechanism of action of lithium treatment."



Three former NIH'ers (from l) Dr. Nafees Ahmad, Dr. Bahige M. Baroudy, and Dr. Girish J. Kotwal are pictured in the P-3 biosafety facility at the James N. Gamble Institute of Medical Research.

Dr. Clarence H. Brown III, who was a clinical associate in the Medicine Branch, NCI, from 1968 to 1970, has been named the medical director for Florida's Orlando Cancer Center. The center opened in January through a program linking the University of Texas M.D. Anderson Cancer Center and the Orlando Regional Medical Center. He is a hematologist and oncologist who has been in private practice in Orlando since 1975. He will coordinate the multi-specialty services of about 30 Orlando area physicians who will staff the freestanding ambulatory cancer center.

Dr. Peter E. Dans, a research associate at NIAID from 1964 to 1967, writes that he is now associate professor of medicine at Johns Hopkins School of Medicine and has directed, since 1983, the required first-year course on ethics and medical care. He is also on Maryland's Board of Physician Quality Assurance, which licenses and disci-

(See *Members p. 6*)

Members (continued from p. 5)

Maryland's Board of Physician Quality Assurance, which licenses and disciplines physicians and other health care professionals. His wife, Colette, who worked at NIAID from 1960 until 1966, is now teaching French in the Baltimore County Public Schools.

Dr. John L. Decker, who recently retired as director of the Clinical Center, was honored when the John L. Decker M.D. Bioethics Resource Center at the CC was officially dedicated on Jan. 11 in recognition of his support of the Bioethics Program. The Bioethics Resource Center will include a library of 300 non-circulating volumes, an online computer network with the Kennedy Institute of Ethics at Georgetown University, a reprint file, a full and complete line of audiovisuals, and it will be coordinated with the NIH Library for literature search services.

Dr. Tom Folks, who was formerly in the Laboratory of Immunoregulation, NIAID, left in October 1988 to go to the Centers For Disease Control in Atlanta as chief of the Retrovirus Diseases Branch in the Division of Viral and Rickettsial Diseases. The research in his laboratory concerns the epidemiology, immunology and virology of HTLV-I and HIV. He still collaborates with colleagues in NIAID. He reports that one of the biggest changes in moving from NIH to direct his own laboratory has involved the increase in administrative responsibilities that take him away from actual bench work.

Dr. Robert P. Friendland writes: "In May 1990, I left the NIA where I was deputy clinical director and chief of the brain aging and dementia section. My new position in Cleveland is clinical director of the Alzheimer Center of the University Hospitals of Cleveland and associate professor of neurology, radiology, and psychiatry in the school of medicine at Case Western Reserve Uni-

versity. I continue to work in neuroimaging research and pathophysiological studies of Alzheimer's disease and brain aging. My wife, Dr. Elisabeth Koss, who was a neuropsychologist in the brain aging and dementia section at NIA and a research advisor for the World Health Organization's Special Programs and Research on Aging (affiliated with NIA) is now a research neuropsychologist in the Alzheimer Center."

Dr. Christian Gillin left NIMH in 1982 to become a professor of psychiatry at the University of California, San Diego (UCSD). He has continued his research on sleep, sleep disorders and the psychopharmacology of sleep. In 1987, he helped found a new journal of neuropsychopharmacology. While at NIH he was a commissioned officer in the PHS and remained in the Naval Reserve in California. He was called to active duty during the recent conflict and is now serving as a captain at the Naval Hospital in Charleston, S. C. in clinical psychiatry. His wife, Dr. Fran Gillin, left NIAID's Laboratory of Parasitic Diseases in 1982 to take a position as adjunct professor in the department of pathology at UCSD medical school's division of infectious diseases. Her research continues to center around the intestinal mucosal parasites such as giardia.

Dr. Joe R. Held, director of DRS from 1972 to 1984, and now vice president for primate operations at Charles River Laboratories in Arlington, Va., received the James A. McCallam Award for outstanding contributions in international veterinary medicine from the Association of Military Surgeons of the United States. This award, which honors Brigadier General James A. McCallam, a former chief of the U.S. Army Veterinary Corps who served in both world wars, honored Held for his outstanding accomplishments in the field of medicine and health.

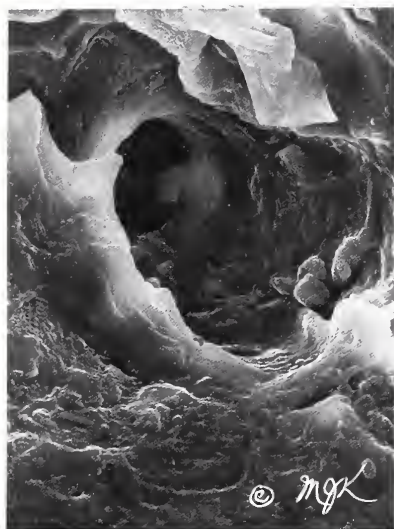
Dr. Ronald B. Herberman, at NCI from 1966 to 1985, is director of the Pittsburgh Cancer Institute and professor of medicine and pathology at the University of Pittsburgh. He has been named a member of the Pennsylvania Cancer Control, Prevention, and Research Advisory Board, which is part of the Cancer Control Program of the state's health department. It facilitates statewide cancer control efforts, and helps set policy for the state's cancer appropriations.

Dr. Alfred Ketcham, who in his 1957-1974 tenure at NIH was chief of the NCI's Surgery Branch and clinical director of NCI, has been elected president of



the Society of Surgical Oncology. Since leaving NCI, Ketcham has been chief of surgical oncology at the University of Miami and the Sylvester professor of oncology.

Dr. Marilyn J. Koering, who was at NICHD in the Pregnancy Research Branch from 1978 until 1984, is currently professor in the department of anatomy at George Washington University School of Medicine and Health Sciences. She recently had an exhibit of her photographs, entitled "Once Invisible" at the Marvin Center's Colonnade Gallery, George



Koering's photograph shows a magnified sweat gland pore in the palm of a hand.

Washington University. The stunning photographs were done over the past 17 years using a scanning electron microscope. Koering said the "more I looked at them, the more fascinating they became," and realized that she was seeing art, in addition to science.

Dr. Ronald Levy, a clinical associate at NCI from 1970 to 1972 and currently professor of medicine at Stanford University, shared Switzerland's Dr. Josef Steiner Cancer Foundation prize. The 1989 prize was given "for outstanding contributions to cancer research." The foundation stipulates that the prize money must be used for cancer research.

Dr. Frank L. Meyskens, Jr., who was at NCI from 1974 to 1977, is now director of the University of California at Irvine Clinical Cancer Center and chief of hematology/oncology at the UCI Medical Center. He recently received NCI's Year 2000 Award, which recognizes individuals who have contributed significantly toward the national cancer program.

Dr. Howard A. Minners, who was at NIH from 1966 to 1980 (on detail to WHO from 1977 to 1980) writes, "In 1966 I joined the international research programs of the NIH for 11 years with increasing responsibilities. Subsequently, I served for 3 years beginning in 1977 as head of the World Health Organization's research office in Geneva, Switzerland. I returned in July 1980 to become deputy director of the Public Health Service's Office of International Health. In January 1981 I became science advisor to the Administrator, Agency for International Development."

Dr. Paul D. Parkman, who was on campus from 1963 until his retirement in 1990 as director of the Food and Drug Administration's Center for Biologics Evaluation and Research, delivered the invited remarks at the Syracuse Health Science Center graduation awards ceremony in May 1990. He is a 1957 graduate of the medical school.

Dr. J. Palmer Saunders, who was director of the Division of Research Resources and Centers, NCI, from 1956 to 1974, has been named dean emeritus of the Graduate School of Biomedical Sciences at the University of Texas Medical Branch at Galveston. The appointment was effective upon his retirement from the UTMB faculty in November 1990. He has been a professor of pharmacology and toxicology since 1974 and was graduate school dean from 1974 to 1987. In addition to his administrative and research work he has been active in the community. He is a past president of the Galveston unit of the American Cancer Society, treasurer of the University Area Association, trustee of the William Temple Foundation, and president of the Galveston Symphony Orchestra. He also plays trumpet in the Texas Volunteer Band.

Dr. Paul J. Schmidt, who was chief of the blood bank department (now transfusion medicine department) at the Clinical Center from 1954 to 1974, has been since 1975 head of transfusion medicine at Southwest Florida Blood Bank in Tampa. In a recent article in *Florida Business* (March 1990) he was interviewed about his transfusion medicine academic center, which has been established to train health care professionals about the proper use of blood transfusion



therapy: "This blood bank, and blood banking in general, is unrecognizable compared to 1975. For years, transfusion medicine was a support activity. We gave blood to keep patients alive while someone was doing something much more dramatic to them. But now transfusion medicine is recognized as a therapy in itself."

Dr. Boris Tabakoff, until recently scientific director, NIAAA Intramural Research Program, has taken a position as professor and chairman of the department of pharmacology at the University of Colorado School of Medicine. He writes, "The graduate school program in the department has been funded continuously since 1967 by NIH, making it one of the oldest programs receiving continuous support for graduate training in the country."

Science Research Updates

LASER THERAPY EVALUATED AS FIRST-LINE GLAUCOMA TREATMENT

Preliminary evidence from an NEI clinical trial suggests that argon laser therapy may be a safe and effective alternative to eyedrops as a first treatment for patients with newly diagnosed open-angle glaucoma. However, because open-angle glaucoma is a chronic disease with a variable rate of progression, the patients will continue to be followed up to 3 additional years to further assess the value of both treatments. In open-angle glaucoma, the most common form of the disease, minute changes within the eye gradually interfere with the flow of fluids that nourish the tissues in the front of the eye. If these fluids fail to drain properly, the resulting increased pressure inside the eye can eventually damage the optic nerve.

Most eye specialists begin glaucoma treatment with eyedrops, either to improve fluid drainage or to slow fluid formation. Medications, however, must be used daily, can produce annoying and sometimes serious side effects, and sometimes fail to control intraocular pressure. Alternatives include surgery to create a tiny hole in the coat of the eye or laser treatment to do the same thing or to stretch open holes in the drainage tissue.

The Glaucoma Laser Trial (GLT) was designed to evaluate the relative efficacy of medical and laser treatment. All 271 patients received both types of treatment, one type in each eye. If the initial laser surgery failed to control ocular pressure, eyedrops were administered according to a stepped sequence. After 2 years of followup, laser treatment alone was suffi-

cient to control pressure in 44 percent of the eyes, compared to 30 percent of the eyes treated with the antiglaucoma drug timolol alone. The percentage of laser-treated eyes that could be controlled with laser alone or laser with timolol was 70 percent. When eyes in either treatment group required stronger eyedrops, pressure was controlled in 89 percent of those having prior laser treatment and in 66 percent of those who received only medication.

Glaucoma is the second leading cause of blindness among all Americans and the leading cause of blindness among Black Americans. Approximately 4,600 people become blind from glaucoma each year.

HUMAN NEURONS GROW IN CONTINUOUS CULTURE FOR FIRST TIME

Scientists supported in part by NINDS have established the first cell line from human brain cells to survive in continuous culture. Drs. Gabriele V. Ronnett, Solomon H. Snyder, and colleagues at the Johns Hopkins University School of Medicine obtained cells following surgery on an 18-month-old girl to remove brain tissue as a treatment for intractable seizures. The seizures were a result of unilateral megalencephaly, a disorder in which immature brain cells grow and spread abnormally.

The cells grown in culture were neurons, and they expressed neurotransmitters typical of the cerebral cortex. According to the authors, who reported their achievement this spring, the nature of the disease may have made the affected cells uniquely suited to surviving and growing in culture. The availability of cell lines permits a wide variety of studies of cell function and growth; a human brain cell line furnishes an important tool for neurologic research and possibly an avenue for studies aimed at brain tissue transplantation.

CELLS TRANSPLANTED INTO THYMUS OF RATS TRICK IMMUNE SYSTEM INTO TOLERATING THEM AND ANOTHER GRAFT

Transplantation of foreign pancreatic islets into the thymus may provide an avenue for protecting the donor cells from immune rejection, according to research by NIDDK grantees. Transplantation of insulin-producing islet cells is one approach to long-term correction of insulin-dependent diabetes, but rejection of the transplanted islets has been a stubborn obstacle to success. Drs. Ali Naji, Clyde Barker and associates at the University of Pennsylvania, Philadelphia, recently transplanted islets from donor rats of one strain into thymus glands of a different strain of rat. When the transplant was accompanied by an injection of anti-lymphocyte serum that temporarily reduced T cell concentration in the recipient rats, the transplanted islets survived indefinitely without further immunosuppression, revealing the thymus as a new immunologically privileged site for transplantation, at least in rats. (Previously the only demonstrated immunologically privileged sites were brain and testicle.) Even more striking, a second transplant, to a site outside the thymus, of islets from the same donor strain also survived in these rats without immunosuppression. Until now, the first transplant to an immunologically privileged site was usually rejected when a second transplant from the same donor was made to a non-privileged site in the animal.

The research suggests that transplant surgeons may be able to use the function of the thymus in "conditioning" maturing T cells to tolerate tissue transplanted into the thymus as "self" and not foreign. If this approach works in tests in larger animals, it may prove useful in transplantation of other types of cells, as well as organs.

DIABETES ANTIGEN IS NEUROTRANSMITTER-SYNTHESIZING ENZYME

A protein known to be an antigenic target for the destructive autoimmune process in insulin-dependent diabetes (IDDM) has been found to be a key brain enzyme, according to NIDDK-supported scientists.

IDDM results from autoimmune destruction of the insulin-producing pancreatic islet cells. Among the biochemical hallmarks of IDDM are autoantibodies to pancreas-associated antigens, including the so-called 64K protein. The autoimmune destruction begins well before symptoms appear, so autoantibodies characteristic of the disease can be detected in individuals who are at risk for diabetes but have no symptoms. Autoantibodies to the 64K antigen, for example, have been detected in people at risk for IDDM years before the onset of clinical disease, and, for these reasons, the antibodies are an important marker of impending IDDM.

Drs. Steinunn Baekkeskov of the University of California, San Francisco, and Pietro De Camilli of Yale University and colleagues noted that IDDM is common in people with stiff man syndrome (SMS), a rare but serious neurologic disease. Like IDDM, SMS is an autoimmune disease. Most SMS patients have autoantibodies to glutamic acid decarboxylase (GAD), the enzyme that synthesizes the important neurotransmitter GABA (gamma-aminobutyric acid). Both the pancreatic islet cells and central nervous system neurons express GAD. These researchers found that almost all SMS patients also have islet cell autoantibodies. The scientists used immunologic methods to show that the 64K antigen was in fact GAD.

Positive identification of the 64K antigen should both help in the development of techniques for early identification of

people at risk for IDDM and aid in discovering how and why the autoimmune process in IDDM occurs. Interrupting the autoimmune attack on GABA may also provide an avenue for prevention of IDDM. For the diabetes community an added dividend of the 64K antigen's new identity is the already intensive research effort under way on GABA and GAD.

GENES FOR KEY IMMUNE SYSTEM ENZYME IDENTIFIED

NIGMS grantees have isolated two genes responsible for producing recombinase, a putative enzyme that clips and joins DNA segments in developing lymphocytes to yield the enormous variety of antibodies and antigen-binding receptors on T cells (thymus-derived lymphocytes).

Dr. David Baltimore, now of Rockefeller University in New York City, and his colleagues at the Whitehead Institute for Biomedical Research in Cambridge, Massachusetts, discovered the two genes, which they named recombination activating genes, or RAG-1 and RAG-2. The enzyme product of these genes—postulated but not yet isolated—stimulates the efficient recombination of three kinds of DNA segments—V (variable), D (diversity), and J (joining)—that, along with the C (constant) segments, are necessary to produce a functioning antibody or a T-cell receptor protein. The many possible combinations of these segments provide the diversity necessary for the immune system to respond to the incredible number of organisms and other proteins that we encounter during life.

Identification of the recombination activating genes is a very important step toward understanding the fundamental mechanisms of the immune system. This work should also contribute to the understanding of inherited types of immune deficiencies, as well as some lymphomas and leukemias.

PHYSICALLY DEMANDING JOBS HAVE LITTLE EFFECT ON PREGNANCY OUTCOME

Long hours of stressful, physically demanding work by pregnant women do not appear to be a risk factor for miscarriage, ectopic pregnancy, premature birth, low birth weight, or stillbirth, according to a large-scale controlled study by NICHD researchers.

NICHD's Drs. Mark Klebanoff, Patricia Shiono and George Rhoads compared pregnancy outcomes of two groups of women: medical residents and the wives of their male counterparts. Out of 4,412 women medical residents studied and 4,236 residents' wives, 989 residents and 1,239 residents' wives completed their first pregnancy during residency and gave birth to a single live infant. While the female residents reported working about twice the number of hours of the employed wives of male residents, there were no differences in the frequency of adverse outcomes of the pregnancies, except in the group of women residents who reported working more than 100 hours per week, especially during the third trimester. These women had an increased risk of preterm delivery (before 37 weeks gestation).

Previous, smaller studies have associated long hours of physically demanding work with adverse pregnancy outcomes but have failed to account for the fact that many women in physically demanding jobs are also poorly educated and paid. The NICHD study eliminated socioeconomic status as a confounding factor by surveying only women of similar economic and educational status. The study suggests that among healthy women who are well educated and who have access to good prenatal care, hard work in and of itself does not compromise the chances that a woman will bear a healthy child.

(See *Updates* p. 10)

Updates (continued from p. 9)

TRANSGENIC MICE CREATED FOR SCREENING DRUGS TO REVERSE MULTIDRUG RESISTANCE OF CANCER CELLS

A new line of genetically engineered mice can drastically reduce the number of mice and the time needed for screening new drugs to overcome cancer resistance to chemotherapy.

NCI scientists Ira Pastan, Michael Gottesman and their coworkers produced a strain of mice in 1989 that carries the human multidrug resistance (MDR) gene. The gene is present in all the animals' cells, but it is expressed only in the bone marrow. Expression of the gene protects the bone marrow from the effects of cancer chemotherapy, permitting normal numbers of white blood cells to be manufactured even when the animals are treated with toxic drugs. The gene confers resistance to a number of drugs used to treat cancer, including doxorubicin, vinblastine, and taxol.

These researchers have now shown that the transgenic mice can be used to test agents that can reverse MDR-caused resistance. The MDR gene produces a transporter protein that pumps toxic drugs out of cells, according to the researchers. An important goal of cancer research is to develop safe and effective reversing agents that overcome multidrug resistance by competing with toxic drugs for the MDR transporter. This allows the toxic drugs to remain within and destroy the cells.

Current methods of testing new reversing agents require large numbers of animals (typically 100) and many weeks. Testing with the new mice requires only three to five animals and several days, making it possible to rapidly and less expensively test large numbers of candidate drugs.

TISSUE COMPATIBILITY ANTIGEN MAY CAUSE FORM OF ARTHRITIS

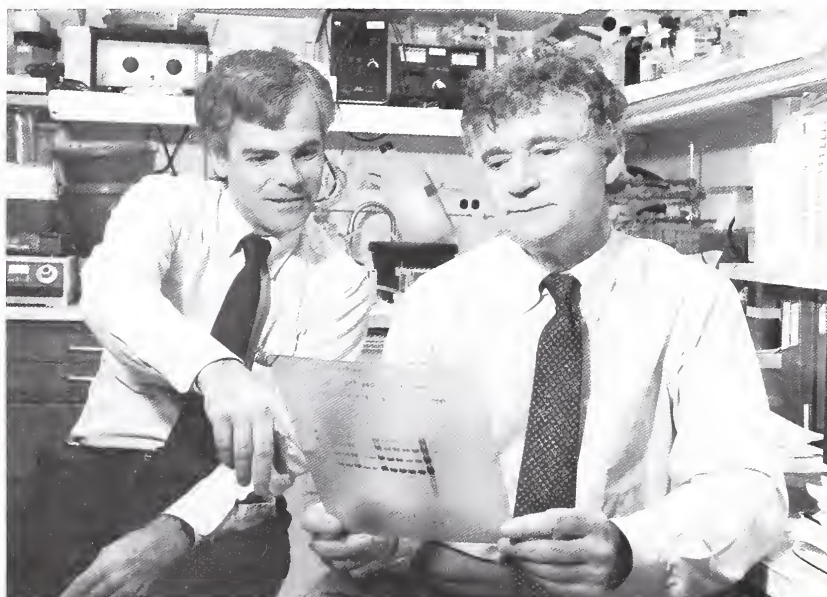
The HLA-B27 tissue antigen, a protein long known to be a genetic marker for a group of arthritic diseases called spondyloarthropathies, may be a major cause of these disorders according to the creators of a newly developed transgenic animal model.

Every person's cells bear a characteristic set of HLA antigens or markers, which play a crucial role in the genetic control and function of the immune system. In work supported by NIAMS and NCRR, researchers used transgenic technology to produce two strains of inbred rats that carry the human genes for the HLA-B27 tissue antigen. To develop their animal model, the researchers inserted two human genes that code for the HLA marker into fertilized rat eggs. Some of the fertilized eggs developed into rats with functional human genes.

Beginning 2 to 3 months after birth, the descendants of the transgenic rats spontaneously developed almost all of the symptoms of the spondyloarthropathies, including inflammation and destructive changes of the spine, large joints, bowel, skin and other organs. Principal investigators in this work were Dr. Joel D. Taurog at the Harold C. Simmons Arthritis Research Center at the University of Texas Southwestern Medical School in Dallas, and Dr. Robert E. Hammer in the Howard Hughes Medical Institute at Southwestern.

Future studies in which these transgenic rats will be bred and raised in a germfree setting may help investigators determine if an infectious agent is necessary to work with HLA-B27 in causing disease, as other studies have suggested.

This material was compiled by Charlotte Armstrong, Office of Communications, OD.



NCI researchers Drs. Michael Gottesman (l) and Ira Pastan produced in 1989 a new line of genetically engineered mice that scientist say could help combat some chemotherapy-resistant cancers.

Modest Increases Characterize Budgets for 1991, 1992

By Calvin B. Baldwin, Jr.

The 1991 NIH Budget

Despite the furor over the federal budget deficit and the Gramm-Rudman-Hollings deficit reduction targets, NIH received a 9.2 percent increase in its budget for fiscal year 1991, as well as authority (in separate legislation) for the long sought-after Senior Biomedical Research Service. This new service will allow the Public Health Service to create up to 350 positions with salaries up to \$138,900 to retain and attract biomedical scientists to its intramural laboratories.

On Nov. 5, 1990, the president signed into law H.R. 5257 (P.L. 101-517) making appropriations for the Departments of Labor, Health and Human Services, Education, and related agencies. This final appropriation was made after five separate resolutions had funded the federal government from Oct. 1, 1990, until all regular appropriations were signed.

The delay in enactment of regular appropriations bills was linked to passage of a budget reconciliation package, needed to satisfy the requirements of the Gramm-Rudman-Hollings Act with provision for increased revenues and changes in entitlement program expenditures. Until the latter measure was agreed to between the two houses of Congress and the White House, the appropriation bills were held up and there were threats of sequester and furloughs across the government. For NIH, furloughs were averted and for all government, sequestration was not invoked. However, this bill did include a 2.4 percent across-the-board reduction.

The following are highlights of the major provisions of the conference report (House Report 101-908) that address only the major differences between the House and Senate:

—The conference agreement provides \$8,306,648,000 for NIH after the 2.41 percent reduction, a loss of \$205,134,000. This is, however, a 9 percent, or \$730.3 million, increase over the comparable FY 1990 level, and a 5 percent, or \$378.7 million, increase over the FY 1991 request. Adjustments resulting from the reduction were directed to be spread uniformly across mechanisms, including research project grants.

—There is conference agreement that the "funds should be managed by the NIH consistent with the 4-year spending plan identified in the House and Senate reports accompanying the bill." It is expected that there will be no arbitrary downward negotiations of research grants with the funds provided, and a report is required within 30 days of enactment,

giving precise estimates of the 1992-95 cost of implementing the plan.

—In addition, there was a \$29.9 million reduction for NIH's share of a \$50 million reduction in the amount appropriated to HHS for salaries and expenses, resulting in a 1991 net appropriation of \$8,276,739,000 for NIH.

—Provision is made for a discretionary fund for the NIH director, both through a \$20 million earmark in the Office of the Director account and a 1 percent transfer authority for the director.

—\$15 million is provided for extramural construction grants, to be awarded competitively.

—Conference language gave specific directions to various NIH components as follows:

NCI: \$7 million for proton beam therapy program; urging that \$250,000 be used to initiate a study on tamoxifen in the prevention of breast cancer.

NHLBI: \$8 million for the National

(See *Budget* p. 12)

The NIH Budget — FY 1991 & FY 1992

FY 1991 — Another good year for the NIH as Congress increases its budget 9.2 percent to \$8.3 billion.

FY 1992 — President Bush requests \$8.8 billion, a 6 percent increase over 1991.

(Budget Authority in millions)

	1989	1990	1991	1992	Change
Research Project Grants	\$4,034	\$4,180	\$4,498	\$4,893	+\$395
(Number)	(20,681)	(20,281)	(21,186)	(21,818)	(+632)
Intramural Research	789	860	925	988	+63
Research Training	256	286	306	315	+9
Centers	605	633	713	746	+33
R&D Contracts	543	568	615	646	+31
Research and Management					
and Support	303	343	371	427	+56
Office of the Director	47	90	98	95	-3
Buildings & Facilities	38	61	169	104	-65
All Other	530	555	582	561	-21
Total, NIH	\$7,145	\$7,576	\$8,277	\$8,775	+\$498
AIDS (non-add)	(\$602)	(\$742)	(\$804)	(\$851)	(+\$46)
Full-time Equivalents	13,204	13,507	14,269	14,632	+363

Budget (continued from p. 11)

Marrow Donor Program (NMDP) for HLA typing, with an emphasis on recruiting minority groups underrepresented on the registry; \$1.1 million for program administration of the NMDP; \$3 million for an intramural bone marrow transplant unit at the NHLBI; the expectation that NHLBI will work with the Navy Medical and Research Development Command on the latter.

NIAD: Direction that pediatric AIDS trials be funded at the levels provided in the House report "less the proportionate reduction in the overall appropriation for the institute agreed to in conference."

NICHD: Funds included for second year of 5-year plan for research on sudden infant death syndrome, with expeditious implementation.

NIHS: Additional \$3 million for the National Toxicology Program, and \$500,000 for academic awards for excellence in environmental and occupational medicine.

NIA: Sufficient funds to expand the health and environment survey and encouragement to support research on Alzheimer's disease prevalence in special populations.

NIHCD: Encouragement for support of neurobiology as part of the NIH celebration of the Decade of the Brain.

NLM: Expression of concern regarding potential changes in the Paperwork Reduction Act that would have an adverse impact on cost recovery and quality assurance efforts for the databases of the National Library of Medicine. It was stated that, should there be a change in the law, "strong consideration will be given to legislative action to restore current policies."

OD: \$20 million for a director's reserve (in addition to the 1 percent transfer authority); urging expansion of extramural support for supercomputing through the National Center for Research

Resources; \$15 million for extramural construction; limitation on the 1 percent transfer authority to no more than 1 percent from any single appropriation.

Buildings/Facilities: \$35 million to complete the Child Health/Neurosciences Building (Bldg. 49) and \$60 million for the next phase of the Consolidated Office Building.

Office of the Secretary: Deletion of Senate language that would have fixed a 5-year term for the NIH director; new requirement for a Secretarial report to Congress, no later than Mar. 15, 1991, with a proposal for addressing the concerns regarding recruitment for the position and insulating it from political influence.

The 1992 NIH Budget

The president has requested \$8,775,000,000 for NIH in FY 1992, an increase of 6 percent over FY 1991. The request emphasizes support for research project grants by providing \$4.9 billion, an increase of 8.8 percent. The FY 1991 appropriations for NIH were accompanied by reports from the Congress that focused on the need for NIH to provide stable support for biomedical research. In FY 1992, NIH will support 21,818 research project grants, an all-time high for NIH. The training budget will support 12,318 research trainees, an increase of 140 awards over FY 1991.

A second area of emphasis in FY 1992 is the rehabilitation and renovation of NIH's research facilities, for which \$104 million is requested. Together with funds appropriated in FY 1991, a total of \$273 million will be devoted to this effort, which will fund crucial infrastructure improvements, the Clinical Center modernization/safety program, rehabilitation of older laboratory buildings, and renovations to NIH animal facilities. Ongoing construction projects include the Child Health/Neurosciences Building, which is scheduled for completion by early 1992, and a new Consolidated Of-

fice Building, which received \$58 million in FY 1991.

Specific research initiatives on which NIH will focus in FY 1992 include expanding efforts to map the human genome (\$110 million), broadening the knowledge base on Alzheimer's disease (\$209 million), and enhancing our understanding of and treatments for HIV/AIDS (\$851 million).

The president's request for a 6 percent increase in NIH's 1992 budget must be viewed in light of his request for a 12 percent increase in government spending on research and development. The request for the National Science Foundation provides an 18 percent increase, and the budget for the National Aeronautics and Space Administration would grow by 13.6 percent. The Ad Hoc Group for Medical Research Funding, a coalition of 150 organizations, issued a statement that the proposed NIH budget would "fall substantially below the levels required to exploit the scientific opportunities that are currently apparent."

Baldwin was formerly NIH associate director for administration, 1980-86.

The 2nd NIH Alumni Day symposium sponsored by NHLBI will be held Monday morning, Sept. 23, 1991, in Masur Auditorium. We will have more details and information in our next newsletter.

The NIHAA would like to thank the Roche Institute of Molecular Biology for its generous contribution toward the publication of this issue of *Update*.

Gene Therapy (continued from p. 1)

Since 1986, Rosenberg has been treating certain cancers with TILs that have not been altered by gene insertion. About half the patients with advanced melanoma show some improvement after therapy with unaltered TILs.

"We need to improve TIL therapy, and one way may be with the addition of genes that can stimulate the production of antitumor toxins and thus enhance the ability of TILs to destroy tumor cells," Rosenberg said.



Dr. Steven A. Rosenberg

This trial, the first approved study using gene therapy to treat cancer, follows two earlier federally sanctioned trials with this new gene technology.

In a preliminary trial reported in the Aug. 30, 1990, *New England Journal of Medicine*, Rosenberg's team inserted gene-altered cells into patients with advanced melanoma, but the gene had no therapeutic potential. The inserted gene served only as a marker to identify TILs that could later be recovered from the patient's blood or biopsied tissue, thus

helping scientists to better understand how these cells work in cancer therapy.

Last September, another NIH group—Drs. R. Michael Blaese and Kenneth W. Culver of NCI and gene therapy pioneer Dr. W. French Anderson of NHLBI—transfused a severely immunodeficient 4-year-old girl with her own white blood cells that had been altered in the laboratory by addition of the human ADA gene. The patient, who is doing very well so far, has ADA deficiency, an extremely rare, inherited disease that can result in death if untreated.

TNF is a protein produced by the body in the course of bacterial infections. Although initially recognized for its cancer-killing activity in mice, TNF also regulates inflammation and immunity by signaling the body to repair injuries and fight infection. However, if TNF is active in the body for too long or at too high a concentration, it can cause shock and body wasting.

At the tumor site, TNF appears to work by cutting off the developing blood supply in that region. By using TILs to target the tumor and carry the TNF gene directly to the tumor site, the scientists hope to maximize the gene's benefit and also minimize the potential toxicity that could result if TNF were distributed throughout the body.

"This gene therapy approach to cancer is being investigated in the research setting and is in an early stage of development," Rosenberg said. "Ultimately, it may be applied to a wide range of diseases, including cancers other than melanoma."

If you did not receive issues of *NIHAA Update* and would like a copy, please notify the editor at 9101 Old Georgetown Rd., Bethesda, MD 20814.

CALENDAR

MAY

An exhibit on "A Decade of Historical Acquisitions at the National Library of Medicine, 1981-1990" will be on display in the front lobby of the NLM (Bldg. 38, 8600 Rockville Pike) from May 1 through Aug. 30, 1991. The exhibit will highlight significant additions of the past 10 years to the collections of the library's History of Medicine Division. It will include rare books, manuscripts, prints, photographs, audiovisuals and ephemera. For more information call (301) 496-5405.

The R. E. Dyer Lecture will be Tuesday, May 7, 1991, at 3 p.m. in Masur Auditorium, Bldg. 10. The speaker will be Dr. Max Cooper.

The NIH Lecture will be Thursday, May 23, 1991, at 3 p.m. in Masur Auditorium, Bldg. 10. The speaker will be Dr. Wen-Hwa Lee.

NIHAA EVENTS

A "Mixer" sponsored by NIHAA at the AAP/ASCI/AFCR meetings, May 3-6, 1991, Seattle, Washington, will be held on Saturday, May 4, 1991, from 5 to 7 p.m. in the Madrona Room, Seattle Sheraton Hotel and Towers, 1400 Sixth Ave.

On Tuesday, May 21, 1991, from 7 to 9 p.m. the NIHAA will host a reception at the Embassy of Italy to honor the visiting Italian scientists at NIH. Details will be mailed to Washington area chapter members in mid-April.

For more information about various lectures and events at NIH, you may call (301) 496-1766 and for NIHAA (301) 530-0567.

Axelrod (continued from p. 1)

Axelrod was 33 when he began his research career and 43 before he earned a Ph.D. "Many (scientists) are over the hill by then," he laughs. Though he retired in 1984, he still works virtually every day, and has published some 35 papers since "retiring."

"People think I'm a sort of oddity," he admits. "I've had a very unconventional scientific career. I wouldn't recommend it."

Born in New York City 78 years ago, Axelrod remembers having been a voracious reader as a child. "I read a lot—I was intellectually interested in everything, and eager to learn."

Axelrod's first ambition was to become a doctor. He attended the free City College of New York, graduating with a B.S. in biology and chemistry in 1933. "I couldn't get into medical school, though, probably because of my religion. At that time, there were quotas for Jewish students in medical schools."

The year Axelrod graduated from college, the country was in the depths of the Great Depression and jobs were scarce. To assure that he could earn an income, Axelrod took the government's postal exam.

"I almost joined the Post Office, but a lab assistant job was open at NYU medical school, paying \$25 a month," he recalls. "It was just pure luck that I decided to take the laboratory position."

After a few years in the lab, he obtained a job testing newly discovered vitamins in food at the Laboratory of Industrial Hygiene in New York.

"I was there for about 10 years," he remembers. "I didn't do research. My job was to modify existing methods for the analysis of vitamins to test in food products. The experience of developing and modifying methods proved useful in my subsequent research career."

Hardly anyone chose a research career in those days, Axelrod said. "There were

few opportunities to do research and the work was poorly paid. What little work was done was supported by philanthropists. A person had to be wealthy and smart to do research. Few physicians did research in their spare time."

At this point, Axelrod still "had no idea of a research career." One day, the head of his laboratory—a retired professor of pharmacology named George Wallace—came to him with a problem: certain nonaspirin analgesics were causing blood disorders in some people. The professor advised that Axelrod see Dr. Bernard Beryl Brodie, who was on the faculty of NYU, about it.

"I met with Dr. Brodie one fateful day in February 1946," says Axelrod. "This was my first introduction to research. I found him to be a stimulating and inspiring person. He suggested that I join his lab to work on nonaspirin analgesics. We found that these compounds, acetanilide and phenacetin, formed toxic metabolites."

Curious to find what the main metabo-

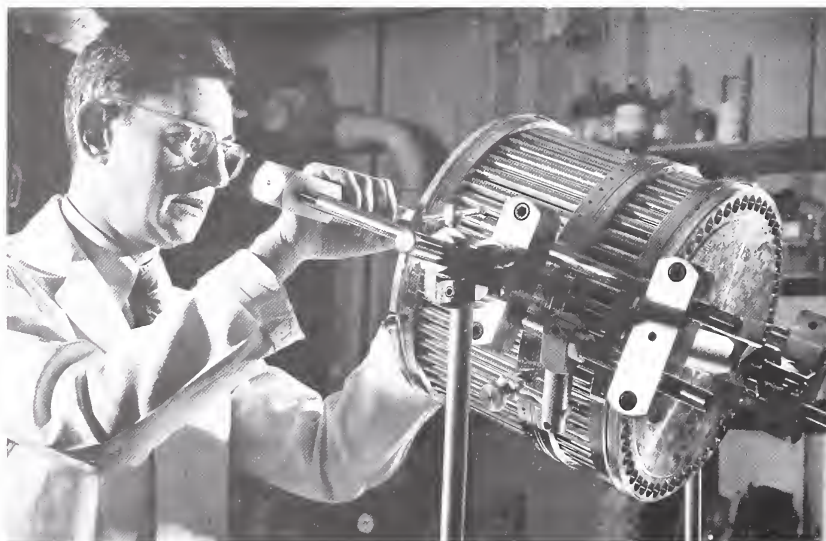
lites of these analgesics were, Axelrod and Brodie found that the drugs were metabolized to what is now known as acetaminophen. They also observed that this metabolite did wonders for headaches. Today, acetaminophen is known popularly as Tylenol.

"We didn't deliberately look for a new headache remedy," explains Axelrod. "It just turned up in the course of our research."

"I took to research immediately," he recalls fondly. "I did it well and I loved it."

Axelrod continued working in Brodie's laboratory at Goldwater Memorial Hospital (a branch of NYU medical school) and spent 3 years studying the metabolism of analgesics and anticoagulants. Realizing that he couldn't be promoted in academia without a Ph.D., he began a job search.

"One day I saw an item in the *New York Times* that James Shannon, formerly a professor at NYU medical



He was "Mr." Julius Axelrod when this picture—of fractionating equipment used in determining the fate of caffeine and other drugs and biologicals in the body—appeared in the Sept. 21, 1953, issue of the *NIH Record*.

school, was appointed head of the National Heart Institute," he said. "I wrote to him and he gave me a position at the heart institute."

Scientists were reluctant to come to NIH in those days, Axelrod remembers. "It was considered just another government lab. It was not at all as prestigious as it is today."

Axelrod credits Shannon, who became the eighth NIH director, with transforming NIH to the high status that it enjoys today.

"Shannon persuaded Congress that the way to treat and cure diseases is not to throw money at targeted research but to understand basic fundamentals of how the body works. He also had a great capacity to attract very good people."

At Shannon's bidding, Axelrod joined NHI in 1950, where he was reunited, at the GS-9 scientist level, with his mentor Brodie in the Laboratory of Chemical Pharmacology.

Located in Bldg. 3 on a campus that featured just a handful of buildings and about 100 employees, Axelrod found the atmosphere heady.

"It was a remarkable place," he remembers. "We were all young, and working in a very charged atmosphere. There were three future Nobel prize winners there—(Christian) Anfinsen and (Arthur) Kornberg were the others—and we all bumped into each other. There were also two eventual NIH directors (Drs. Donald Fredrickson and James Wyngaarden) and many investigators who became distinguished scientists.

"We were given a lot of freedom to do basic research, and the salary wasn't too bad. There was a critical mass of people," he reminisced. "We all knew each other and discussed each other's work.

"I was working fairly independently, and had published about 25 papers, including one on the discovery of a new class of enzymes that metabolized drugs,

when I applied for a raise to a GS-12," he says, recalling an incident that still rankles him. "They turned me down because I didn't have a Ph.D."

Axelrod had earned a master's degree from NYU in 1941, which satisfied the classroom requirements for the Ph.D. he now began to earn at George Washington University. "I took a year of courses to pass the qualifying exams," he said. "My thesis was on enzyme work that I was doing at NIH."

Once he took his Ph.D. in 1955, Axelrod abandoned NHI for NIMH, where he spent the remainder of his career.

"I didn't quite get what I wanted at NHI, so I started a new career in neuroscience research," he states, simply. "I don't know whether you can do this today."

Axelrod's main research at NIMH was to study the chemistry of the nervous sys-

tem, especially neurotransmitters.

"I did LSD research in the 1950's, and in 1960 described how cocaine and antidepressant drugs work (by blocking the uptake of catecholamines into nerves)," he said. "We were the first to get radioactive marijuana, and to show that it went into fat cells and stayed there for a long time."

The receptor for THC—marijuana's active ingredient—was cloned in his current lab chief Dr. Michael Brownstein's laboratory at NIMH, reports Axelrod.

Was he ever tempted to try any of the drugs? "I think you'd be crazy to do it. I've seen the bad things drugs can do," he says. "I get my kicks doing research."

Several of his colleagues experimented with LSD. "They said it distorted their perception of time and space," he said. "It was a little unpleasant."

(See *Nobelists* p. 16)



Axelrod (r) is surrounded by well-wishers including Dr. Roscoe Brady (l), Dr. Irwin Kopin (c) and Dr. Frederick Goodwin (r) when he learned of winning the 1970 Nobel Prize. Axelrod shared the prize in physiology or medicine with Bernard Katz and Ulf Von Euler "for their discoveries concerning the humoral transmitters in the nerve terminals and the mechanisms for their storage, release and inactivation."

Nobelist (continued from p. 15)

With the Shannon era, NIH's growing reputation began to attract more good people, Axelrod observes. "The Vietnam war also attracted a lot of bright M.D.s. Administrators had been very farsighted in getting the best people—like Kety (Dr. Seymour, head of NIMH) and Frederickson (who became NIH's 11th director)—and giving investigators the opportunity to select and carry out their own problems. We did great science.

"There wasn't the large bureaucracy there is now," he continues. "There were few regulations and restrictions on the kinds of experiments you could do. As the NIH grew, so did its bureaucratic infrastructure. In spite of this, I think the quality (of intramural NIH research) is really first rate.

"NIH still attracts top people," Axelrod allows, "but not as many as it used to. The very bright ones today go to top academic institutions. But most of the professors at those institutions are NIH-trained."

Axelrod says he'd think twice today about embarking on a research career: "I don't know if I'd want the hassle. But I love it so much that I would probably take the chance. Many prospective scientists are pretty cocky when they come out of college. Even if the grant funding level is down around 12-15 percent, you think you're good enough to get it."

Acknowledging that tenure at NIH is tough to get nowadays, Axelrod says it was easy three decades ago. "The corollary to that was that some dead wood accumulated," he said. "We used to have what was known as the 'NIH shunt'—scientists would gain their reputation at NIH and then leave for a professorship in academia."

Though courted by the private sector, Axelrod never thought seriously of leaving NIH. "I didn't want to go through the hassle of getting grants. My style of research was just a matter of following

my nose. I could never predict where I might be 3 or 4 years down the road. At NIH, I didn't have to explain or justify to any great extent what I was going to do."

Which brings him to what he sees hampering young scientists today: "There is a tendency to do fashionable, safe research, to not take chances. If you take a chance and it doesn't work, it would be extremely difficult to obtain another grant. People tend to take on problems they know they can solve and do it just a little bit better than anyone else."

In spite of this, biological science, he admits, is growing at a tremendous pace.

"The important science is done by relatively few—maybe 10 or 20 percent—of scientists," he said. "Many just plod along, improving existing information. If one judges by literature citations, only 10 or 20 percent of the working scientists receive 80 to 90 percent of the citations."

"My style of research was just a matter of following my nose. I could never predict where I might be 3 or 4 years down the road. At NIH, I didn't have to explain or justify to any great extent what I was going to do."

—Dr. Julius Axelrod

Axelrod takes particular delight in acting as mentor to young scientists. "I always give advice. It's a great pleasure to work with and train young people," he says, eyes brightening. "I've trained about 70 people, many of whom are very distinguished."

Three NIH-Howard Hughes Medical

Institute scholars are working or have worked in Axelrod's lab on the third floor of Bldg. 36, where he maintains a study stout with journals. Two intramural research directors—Dr. Steven Paul at NIMH and Dr. Irwin Kopin at NINDS—are his students. Other prominent academics, including Richard Wurtman at MIT and Solomon Snyder at Johns Hopkins, are also Axelrod alumni.

Axelrod's lab chief nowadays happens to be a former trainee—Dr. Michael Brownstein, whom Axelrod describes as "a sympathetic but tough guy—he has high standards."

Though he quit bench work about 10 years ago—"I don't think I'm good enough with my hands to do it anymore"—Axelrod continues to lecture and to exchange ideas with colleagues in his field. He can be amusingly offhand about his cogitations with his friends: "We talk about problems, we talk about ideas. Some work, some don't."

What continues to consume his still-curious intellect, however, is the chemistry of the brain.

"My main interest is neurotransmitters, the chemical signals of nerves. Neurotransmitters carry a special message to nerves and other cells. My colleagues and I are trying to find out how the neurotransmitter message is conveyed to the cell so that it can be stimulated to carry out a special function. This general area of research is called signal transduction."

For Axelrod, much of biomedicine, including immunology, cardiology, and the study of hormones and other chemosensory factors, involves transduction of biological signals. "Even the AIDS virus conveys a signal, but a bad one," he says.

"Signal transduction is a very complicated and fascinating field, one that we're just beginning to understand. Many clinical problems, including AIDS, diabetes, mental and cardiovascular disease, will be better understood by know-

ing how cells can send and interpret signals."

After 41 years here, Axelrod has a variety of opinions on the current state of NIH, which strikes him today as being "large, fragmented and very specialized. It's hard to know who's doing what, even in your own institute. Of course we're talking about a campus that is more than 10 times larger than it was when I first came." Other observations:

—On the genome project: "I think it's an important project, but I also think it's pretty boring. I don't know how getting the sequence of the genome will excite the very best scientists. One worry is that it would take money away from small science, where most of the novel ideas and advances come from. But you can't discount the possibility that the genome project would help small science."

—On RO1 (investigator-initiated) grants: "They are the guts of science. Any time you diminish that, you diminish the advance of science."

—On winning a Nobel prize: "We all dream of it, but I really didn't expect it. Once you get a Nobel prize, you become a sort of minor celebrity. It didn't change the way I did things at all. I didn't even have an office when I won the prize, only a desk in a lab."

—On fraud in science: "I think it's a minor problem. Misconduct generally comes out in the wash eventually."

—On retirement: "Unless you have a boring job, retirement is not a good thing. One of the ways one can stay young is to use your mind. My job is a labor of love and I find satisfaction doing it, even at this age. I manage to keep up with new advances. I retain some of what I read, but not everything. I feel very fortunate that NIH permits me to stay (he has a lab, two job slots and a budget). I don't work as hard as I used to. I also have the freedom to consult for biotechnology companies. I don't have to justify every little thing I do."

—On lab politics: "There are many styles of management in NIH labs. Some are very hierarchical and some are almost anarchistic. I would describe our lab as convivial. I like the style of freedom of interchange, and democratic decisionmaking. I think this freedom is the reason that American science has gone so far."

—On research careers: "The competition today is fierce but still worth the effort. There are a lot of disappointments in research. Most of the time your ideas don't work the way you want them to."

But you forget about that and go onto the next thing. There is nothing as exhilarating as an experiment that turns out the way you hoped it would."

Though he admits to having bloomed late, Axelrod clearly believes in blooming long. "One can still do good work in the biological sciences at an advanced age," he noted.

His last observation, delivered with a self-deprecating chuckle, is about luck's role in a career that almost didn't happen: "I could easily have become a post office clerk."

'An Unexpected Life in Research'

Successful scientists are generally recognized at a young age. They go to the best schools on scholarships, receive their postdoctoral training fellowships at prestigious laboratories, and publish early. None of this happened to me.

My parents emigrated at the beginning of this century from Polish Galicia. They met and married in America, where they settled in the Lower East Side of New York, then a Jewish ghetto. My father, Isadore, was a basketmaker who sold flower baskets to merchants and grocers. I was born in 1912 in a tenement on East Houston Street in Manhattan.

I attended PS 22, a school built before the Civil War. Another student at that school before my time was I.I. Rabi, who later became a world-renowned physicist. After PS 22 I attended Seward Park High School. I really wanted to go to Stuyvesant, a high school for bright students, but my grades were not good enough. Seward Park High School had many famous graduates, mostly entertainers: Zero Mostel, Walter Matthau, and Tony Curtis. My real education was obtained at the Hamilton Fish Park Library, a block from my home. I was a voracious

reader and read through several books a week—from Upton Sinclair, H.L. Mencken, and Tolstoy to pulp novels such as the Frank Merriwell and Nick Carter series.

After graduating from Seward Park High School, I attended New York University in the hope that it would give me a better chance to get into medical school. After a year my money ran out, and I transferred to the tuition-free City College of New York in 1930. City College was a proletarian Harvard, which subsequently graduated seven Nobel Laureates. I majored in biology and chemistry, but my best grades were in history, philosophy, and literature. Because I had to work after school, I did most of my studying during the subway trip to and from uptown City College. Studying in a crowded, noisy New York subway gave me considerable powers of concentration. When I graduated from City College, I applied to several medical schools but was not accepted by any.—**Julius Axelrod**

From "An Unexpected Life in Research," which Axelrod wrote for publication in the Annual Review of Pharmacology and Toxicology, 1988, 28:1-23.

Syphilis Research During a Decade of Discovery, 1900-1910; From Ignorance to 'Magic Bullets'

By Dr. Richard M. Krause

At the beginning of the 20th century, despite 20 years of intensive bacteriologic research, the cause of syphilis was unknown; no diagnostic test and no treatment had been found. Syphilis was one of the leading causes of morbidity and mortality. But success was soon to follow. In only 10 years, from 1900 to 1910, *Treponema pallidum* was discovered as the cause of syphilis. Animal models were developed for research. The Wassermann test was "invented" for serologic diagnosis. Paul Ehrlich developed Salvarsan, or 606, and proved that it was effective for the treatment of syphilis. This success was preceded by 300 failures with related arsenical compounds. As is the case with AIDS today, those who had syphilis were burdened with a social stigma. It was considered a disease of "bad blood." So the scientific, medical, social, ethical, and economic issues of that day have recurred again with the AIDS epidemic. The success, however, of Ehrlich, Wassermann, and others in the fight against syphilis is an optimistic omen that researchers will be equally successful in the fight against AIDS.

How serious was the syphilis epidemic in the first decade of this century? In Paris alone, 3,000 people died each year from the late stages of syphilis. At least one-third of patients committed to mental institutions had paresis.

Animal Models

For 20 years after Koch's discovery of the tubercle bacillus, efforts to identify the cause of syphilis and to transmit the disease to animals failed. In 1905 in Padua a former student of Ehrlich's produced syphilitic inflammation in the anterior chamber of the rabbit eye. Shortly thereafter, two Italians produced syphilis

in the scrotum of rabbits, a model used to this day. These animal models were needed to study the effects of experimental drugs for syphilis before their use in humans. Two years later at the Dermatology Clinic at the Charité in Berlin, Fritz Schaudinn and Erich Hoffmann detected the causative organism of syphilis in the serous fluid of chancre lesions.

Paul Ehrlich and Development of Salvarsan

In the first decade of this century, Paul Ehrlich was becoming somewhat disenchanted with specific immune serum therapy and the slow pace of vaccine de-



Dr. Paul Ehrlich

velopment for meningitis, typhoid, tuberculosis and other infections. He turned increasingly, therefore, to the idea of developing chemical "magic bullets," or drugs, to augment the body's own natural "bullets."

Sometime around 1906, Ehrlich began his research with arsenic compounds in an attempt to find a treatment for syphilis. This finally led to compound 606 or Salvarsan. By 1909, in 3 short years,

Salvarsan had been produced and tested in animals and then in humans. Think of the task: synthesizing 300 different yet related arsenic compounds, numbered 306 to 606, and conducting animal experiments on each to determine efficacy and toxicity. In those days, and certainly even today, it was a tremendous endeavor. Ehrlich's notebooks reveal that progress was slow and difficult. For example, in his entry describing the use of compound 418 in animal experiments Ehrlich wrote, "I am fully aware that the initial animal experiments allow no conclusions about therapy of human subjects."

There was little reason to anticipate success with the synthesis of compound 606 at the end of May 1909. The epochal experiment with compound 606 to treat syphilitic keratitis in rabbits was conducted on June 8, 1909. The inflamed cornea healed rapidly, which was the first time such a result was achieved. On June 23, compound 606 was used to cure rabbits with syphilis of the scrotal sac.

During the summer of 1909, Phase I clinical trials were begun in humans. What would be the benefits? How serious would be the toxic side effects? The chemical firm, Hoechst, scaled up to manufacture the drug. By September, 23 patients with advanced syphilis, the majority of whom were paralytics, had been treated. Ehrlich did not expect that patients with tertiary syphilis would show significant improvement. But two of the patients developed negative Wassermann blood tests, and several had a decline in positive values. That change was remarkable. Previous clinical experience had shown that positive blood tests always persisted in patients with tertiary lues.

The next step required larger clinical trials. The results exceeded expectations. Syphilis, particularly in its early stages, was treated successfully with Salvarsan, and there was reason to believe that pa-

tients would not develop the late, fatal complications of syphilis, such as heart disease and paresis.

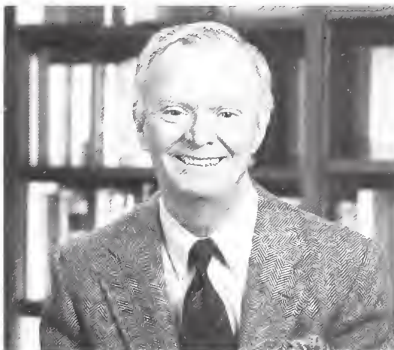
Both the general public and the medical profession were extravagant with their praise for Paul Ehrlich and Salvarsan. Their enthusiasm was understandable, because syphilis, like AIDS today, was no ordinary disease. There was the fear concerning the terrible, fatal course of syphilis—paresis, tabes, heart disease. There was the additional anguish stemming from the social disgrace. Syphilis was the disease of “bad blood.” Hence, anything that was new about syphilis made the daily newspapers, just as AIDS does today.

As the evidence became more and more convincing that Salvarsan was an effective drug for the treatment of syphilis, issues of supply and cost became matters of public controversy. By November 1910, Hoechst was repeatedly accused in the press of delaying the supply of Salvarsan for profit motives, and Ehrlich himself was drawn into this harsh and bitter controversy. Today there is similar controversy over the high cost of AZT for the treatment of AIDS.

The Wassermann Reaction: A Diagnostic Blood Test for Syphilis

The Wassermann blood test to detect syphilis was developed by a long and circuitous route of trial and error, blind alleys, and mysterious serological procedures. It was a messy business, with little of the elegance of Ehrlich's search for the magic bullets. The history of the Wassermann reaction was told by Ludwik Fleck, a Polish physician, microbiologist, immunologist, and philosopher of science, in a book entitled, *Genesis and Development of a Scientific Fact*.

“The procedure is based on five little-known factors, whose mutual effects are adjusted by means of preliminary tests and whose mode of application is se-



Dr. Richard M. Krause

cured through a system of controls...the experienced eye or the serological touch is much more important than the protocol. It is possible to obtain a positive Wassermann reaction from a normal blood sample and a negative one from a syphilitic sample without any major technical errors...and yet the optimum intermediate position between minimum nonspecificity and maximum sensitivity was gradually established.”

Doesn't that sound familiar in regard to AIDS serology—those twins, specificity and sensitivity?

By 1930, there were at least 8,000 published scientific papers on the Wassermann reaction, all of which were done before the NIH awarded research grants! What an army of serologists that effort took, most of whom are unknown to us today.

In his historical review of the Wassermann reaction, Fleck examined the real nature of scientific discovery. He gave fair warning to those who believe that science is more scientific than it really is. Scientists and the public must be fully aware of the unpredictable nature of our search for discovery. Fleck said “an important discovery was made after many errors and detours from false assumptions and irreproducible initial experiments.” We should remember the history of the Wassermann reaction when we write a grant application and when we review a grant application. We must avoid the

safe, the doctrinaire, the predictable, and the fashionable.

Conclusion

For those working on AIDS today, there are lessons to be learned from this history of Ehrlich, Wassermann, and Fleck and their work on syphilis. No one person developed and perfected the Wassermann reaction. It was the work of a *Denkkollektiv*, Fleck's term, a “thought collective” of scientists. Progress comes through their collective efforts. No one person is going to solve the AIDS problem or even one aspect of it. Even Ehrlich was a member of a *Denkkollektiv*.

We will develop a more reliable diagnostic blood test for AIDS than we now have. We will learn how to use it and interpret the results. In addition, I have no doubt we will develop more effective drugs to treat AIDS, at least in its early stages. This may mean treatment at the time of the initial asymptomatic infection, as detected by seroconversion, just as is done today with tuberculosis.

Commenting on his success with experimental chemotherapy, Ehrlich noted that his four big G's played an important role: “*Geduld, Geschick, Gluck*, and last but not least, *Geld*.” Patience, skill, luck, and money. Scientists who are confronting the perplexing pathogenic processes of AIDS and its complex natural history, in an effort to devise methods of treatment and prevention, should remember Ehrlich's four G's. These four G's were the currency that purchased the remarkable advances from ignorance to magic bullets for the treatment of syphilis during the decade of discovery, from 1900 to 1910. Success in the fight against AIDS will be bought with the same coinage.

Dr. Krause is Senior Scientific Advisor, Fogarty International Center, National Institutes of Health.

Human Genome Project Meets Its Market

By Rich McManus

The National Center for Human Genome Research held a briefing on the human genome project recently for a variety of voluntary health associations representing patients and families with inherited diseases—in short, the consumers of new genetic technologies.

Guests learned that investigations of DNA's double helix wind through every institute and illness at NIH, not just at NCHGR. "Genome research is not just a separate entity," reported Dr. William Raub, NIH acting director.

The human genome project "is the molecular genetics of man conducted in a cost-saving and very accelerated manner," explained Dr. C. Thomas Caskey, who heads an NCHGR-supported center for genome research at Baylor College of Medicine. "It would take 100 years to accomplish without the project, but with it it should last about 15 years.

"Americans are impatient about progress," he observed. "We like to see technology pushed as fast as possible."

Caskey, who is also president of the American Society of Human Genetics, called the project "an international, peaceful and scientific initiative. We are going to learn about ourselves at a molecular level."

What we learn will be "inseparable nation to nation, people to people, and will encompass many religions, social contexts, and governments. It will provide fuel for biology for the next 20 to 50 years."

The program will give researchers tools to answer two simple questions, he said: How do genes work? How do genes go awry?

"We need to learn how to modify the pathologic pathway," he said.

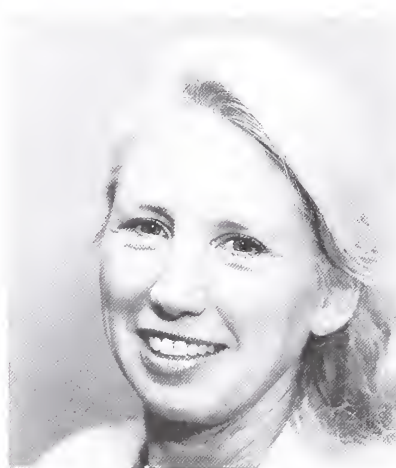
Mammals, Caskey explained, have genes scattered along their chromosomes, which makes their function hard to understand. "If we know where a par-

ticular gene resides, then we can find and isolate it," he said.

Reviewing technological progress in recent decades, Caskey described an ever-finer set of lenses through which we view genes, culminating in the latest technology of sequence tandem base-pair repeats, which allow "a precise roadmap—very dense—which can put genes in precise positions on the map."

A tenfold increase in resolving power has been realized in recent years, with prospects for even finer resolution quite likely.

Not just human, but also mouse, yeast and *E. coli* genomes are coming under scrutiny as scientists try to perceive prin-



Dr. Nancy S. Wexler

ciples of organization of chromosomes and location of genes. Whereas human DNA consists of only about 1 percent coded sequences, DNA from yeast and *E. coli* contains almost 100 percent coded sequences, Caskey said. Comparison studies, increasingly easy to carry out, should yield more information about how genes function.

"There are a large number of diseases that have genetic bases but are not neces-

sarily heritable or linked to one gene," Caskey continued. Such phenomena as aging, diabetes mellitus, coronary artery disease and cancer are the result of many factors, not only genes. Understanding the interaction of the environment and nature will help tell us who we are, said NIH's Raub.

Offering the perspective of an actual gene hunter was Dr. David Housman, a molecular biologist at MIT who for the past 12 years has studied hemoglobin genes, eventually identifying the gene for Wilms' tumor.

"We're more like gene chasers," he modified, before offering a tour of his research "scrapbook" that was designed to answer the question, "How does a researcher pick a chromosome to study?"

"The genome looks like a series of doorways," he said, "behind which is something unknown. The number of doors we have to open will differ with each disease, but the human genome project will give us the tools to open those doors." Housman said the order of the metaphorical doors is similar across species, from mice to humans. In the 10 years since gene mapping became possible, the easy challenges have fallen first, he said. "The process so far has taught us what the hard parts are that lie ahead."

Dr. Nancy S. Wexler, who chairs the joint NIH-Department of Energy working group on ethical, legal and social issues, claimed a personal stake in genetic research—she comes from a family affected by Huntington's disease.

"We're in a very dangerous period," she said, "when we can detect the defective gene but can't treat the diseases that the bad genes cause."

Finding disease genes will be a long, uphill struggle with many false leads, she cautioned, but urged the program to go forward nonetheless.

"Just knowing a disease gene—like the sickle cell gene, which we know back and forth—isn't going to lead to a pana-

cea in the next half hour," she said. "Getting the gene isn't the same as getting the cure, but it's well worth our while to look for them."

Adding a further note of caution was Dr. Robert F. Murray Jr. of Howard University, who also serves on Wexler's working group. "To screen or not to screen, that is the question," he began. A bittersweet review of the history of sickle cell anemia screening in the United States—during which such groups as the Black Panthers and professional baseball players added their dubious authority to the confusion about the disease—led Murray to his conclusion: "There is no end to the absurdities that screening (for genetic diseases) will engender. If you can imagine (a worst case), it will happen. If you don't believe me, just tune in to the Donahue show or Oprah Winfrey."

To prevent, or circumvent, the sort of disasters foreseen by Murray, the NCHGR is spending 3-5 percent of its budget trying to harness the social, rather than medical, power of genetic information through its Ethical, Legal and Social Implications Program.

Headed by Dr. Eric Juengst, the program has three aims: anticipate dilemmas engendered by genetic testing, develop policy options to safeguard society against abuses of genetic information, and educate the public and the profession about what genome research can and cannot offer. "What is fair when it comes to gathering genetic risk information about other people?" Juengst asked. "How good are protections against genetic discrimination?"

Juengst's program is focussing mainly on insurers and employers, as many are concerned that insurance companies will use genetic screening to refuse coverage to workers.

"Will insurance companies regard pre-symptomatic test diagnosis as a prior existing condition (and thus refuse to offer coverage)?" wondered Caskey. "The

truth is, everybody has a (genetic) predisposition to something."

Wexler said the genome project is forcing insurance companies to rethink the way they do business. A two-edged sword, testing can spur the genetically "fit" to drop coverage while prompting those with weaknesses to buy more.

Since the prospect that genetic information might be misused to create "perfect" people is a major concern of consumers of new genetic technologies, NCHGR deputy director Dr. Elke Jordan concluded with an anecdote that was both seasonal and instructive.

A company that offered specially bred Christmas trees with absolutely perfect shape and symmetry, she explained, found, to its consternation, that the public doesn't care much for perfection—imperfect trees with "character" were actually preferred.

Editors Loosen Grip on Medical News

By Rich McManus

Editors at two of the nation's most prestigious medical journals concede that certain medical news is too important to hold for the printed page and may be disseminated by other means prior to actual publication. One channel suggested for early distribution was Medline, NLM's online access to citations in medical literature. Such availability would not jeopardize publication of the article at a later date.

"An approved manuscript could be released online through the National Library of Medicine before actual publication," said Dr. Arnold Relman, the recently retired editor of the *New England Journal of Medicine*.

Dr. George Lundberg, editor of *JAMA*, allowed that there will be times when medical breakthroughs slated to appear in one of the 10 AMA journals may be re-

leased prior to publication. Such early dissemination could precede publication by anywhere from 3 to 8 weeks.

The two rival editors provided most of the fireworks at a workshop convened at NIH to discuss dissemination of clinical trial results. Both paid homage to the painstaking care necessary to conduct such trials, and to the necessity of unsparing peer review. But in the end, both agreed that physicians, being the primary users of such information, and patients, being the primary beneficiaries of their enterprise, need to know about new treatments in the swiftest way possible, even if it means that journals will be "scooped."

While such flexibility has rarely been the rule so far, editors and physicians must now decide when a study's results are so important that prepublication release of information is warranted. Dr. William Raub, NIH acting director, has asked a top-level committee of NIH officials to consider when such measures are appropriate.

"For most studies, regular peer review with no details released prior to publication is best," said Relman. "This allows for quality control, limits mistakes, minimizes the hype, exaggeration and bias, and prevents premature and unwarranted conclusions. In the great majority of circumstances, short-circuiting this process is not a good idea.

"Most new clinical information doesn't come with a big bang," he continued. "It's a gradual process. Publication should be slow, deliberate, critical, discerning and conservative—in short, it should be consistent with the way the data were collected.

"Occasionally there is a great rush, when we need a faster but no less reliable way of completing this process," he said. "We will set aside our embargo and the Ingelfinger rule (named after his predecessor as editor-in-chief and limiting

(See *Editors* p. 22)

Editors (continued from p. 21)

NEJM articles to those not previously announced in any other media) when the news is of urgent importance."

Relman also said NEJM will publish work that has been previewed in a "clinical alert" (put out by NIH information offices to get the word to practitioners) or abstracted on electronic bulletin boards.

"I don't think there's a basic problem here," said Relman, who was the first of several speakers on the 18-person panel to understate the problem. "The system as it stands is good, but may need some fine tuning."

Echoing his reserve was NLM director Dr. Donald A.B. Lindberg, who views the library as a logical choice for speedy dissemination of research results.

"We're not in the business of producing Holy Writ," he remarked. "We're not claiming that (articles previewed in Medline) are all true. We do try hard, however, to get it accurate, timely, and in a form people can use."

Panelists discussed six examples of trials where results were unusually consequential. In each instance, the parties in the process—researcher, editor, reporter and patient (not to mention funding agency)—have agendas that may not be in consonance with the others.

"There is no NIH policy for dissemination of trial results as yet," said Dr. John Ferguson, who heads NIH's Office of Medical Applications of Research, which cosponsored the meeting. "This is a first step."

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FAES Offers Graduate School at NIH

The Foundation for Advanced Education in the Sciences (FAES) Graduate School was initiated in 1952 to provide continuing educational opportunities to NIH scientists. In the 1990-91 school year, about 2,400 registrations were recorded in 170 courses. Evening courses are offered at college, graduate and post-graduate levels in many areas: biochemistry, biology, biophysics, chemistry, communications, computer sciences, general sciences, genetics, immunology, management, mathematics, medicine, microbiology, modern languages, pharmacology, physics, physiology, psychiatry, psychology, social sciences, statistics, toxicology, and virology as well as a few courses in the arts and humanities. A series of medical subspecialty review courses and post-graduate medical courses are offered, all of which are approved for credit in Category I of the Physician's Recognition Award of the American Medical Association.

A majority of the school faculty comes from the NIH staff; the large scientific population at NIH contains many investigators and administrators with a strong desire to teach. Advanced courses are presented by scientists with particular competence and experience in specialty areas.

Courses are approved by the Maryland Higher Education Commission, and are generally accepted for degree credit by universities throughout the world. Introductory and intermediate level courses are of great value to technical personnel seeking to expand their capabilities and backgrounds, and are considered by the Office of Personnel Management for promotion or reclassification purposes. Many of the students already have an M.D. or Ph.D. degree and take advanced courses

to broaden their knowledge in specialty areas or to review and update.

Although initiated primarily for NIH staff as the students, the FAES Graduate School is open to the public. Presently, almost half the enrollment comes from outside NIH (from other federal and municipal agencies, local universities and from the community at large). The courses in continuing medical education are particularly valuable to practicing physicians in the Washington area, because they are held in the evening. Through its Graduate School, the FAES provides needed educational opportunities to scientists, physicians, nurses and students from NIH and the entire Washington area.

The school is constantly in need of instructors and organizers for existing or new courses. Such an activity is ideal for the retired scientist or administrator, not only as a way to remain involved but also as an opportunity to pass on one's wisdom and experience to new generations; there is even a modest remuneration for the effort. If you are not familiar with the school, you can obtain a current catalog by calling (301) 496-7976.

Anyone who has the appropriate background, and would like to participate in the teaching and/or organizing of existing courses or even in creating new ones, is invited to contact Lois Kochanski at (301) 496-7976 or write to FAES, One Cloister Court, Bethesda, MD 20814-1460.

You will be soon receiving a dues renewal notice from NIHAA. Please return it promptly. Dues are an important source of our income and we need your continued support.

Children's Inn at NIH Burgeons in First Year

By Anne Barber

Since July 2, 1990, when the Children's Inn at NIH opened, more than 475 patients and their families from 44 states and 8 foreign countries have stayed in this NIH residence. The children have come to the inn through referral from 10 of the 13 NIH institutes.

"In addition to the heartwarming support we've received from the Clinical Center's medical team and the social workers who are the source of referral for our residents, we have been blessed with help from the entire NIH community. From groundskeeping to emergencies involving the police, transportation services, fire, safety and maintenance services—all have taken extra care of the Children's Inn, and we are most grateful," says Andrew Tartler, executive director of the inn.

"All the hard work put into the design and establishment of the inn has paid off. Our family-centered, self-help concept has been fully realized when you look at the excellent use patients and their families have made of this facility."

When the inn first opened, there were four full-time staff members: Tartler; Kate Higgins, resident manager; Pam Keller, director of volunteers; and Zulienne Wolfrey, administrative assistant. Since then, the board has hired two additional staff members: Margo Bradford, day manager, and Jean Buegler, bookkeeper.

Bradford, who shares the managerial load with Higgins, says, "Our intake has steadily increased so that we have had to implement an administrative/medical priority system to decide who to admit. The inn can provide for up to 36 families, but when we are full, we have procedures to determine who stays and who doesn't, based on the child's health. Many nights

this month (January), we have been full."

A significant strength of the Children's Inn is its volunteer corps. There are currently 150 volunteers serving the inn. They range, according to Keller, from ages 16 to 70 years, and include working people as well as the retired.

"We have varying degrees of commitment from our volunteers—from people who bake for parties to our weekend volunteer resident managers. We provide staffing 7 days a week, for approximately 1,500 volunteer hours a month."

Except for the contract cleaning service, volunteers do everything that is required to keep house. They replenish kitchen supplies, pick up the playroom, make sure fresh linens are placed in each linen closet, fill bird feeders. They also work at the welcome desk answering phones, accepting and orienting patients and their families, ordering the shuttle

van, arranging monthly tours of the inn, and taking residents to the grocery store.

Keller was swamped with calls from potential volunteers even before the inn opened. "In fact," she says, "I received so many I had to limit them to one shift a week."

"The only trouble we had was getting people to come and stay over a weekend. Once we advertised the need, we received adequate weekend and holiday volunteer coverage."

Volunteers make grocery trips with residents four times a week and they drive the inn's van during the weekend when the NIH shuttle doesn't provide service to the Clinical Center and the Metro station.

Tartler emphasizes, "The NIH community has responded very generously to our needs for volunteer help."

Keller says she gets many calls from people wanting to do things for the inn. "For example, as early as last summer, the NIH firemen came to me and offered to do a holiday party for the children in

(See *Inn* p. 24)



In the lobby of the Children's Inn at NIH, children play in front of a dollhouse donated by William B. Edelblut Jr. of O'Donnell's Restaurant Inc. Volunteers Wendy and Joseph Allan restored the dollhouse to its original splendor.

Inn (continued from p. 23)

December. We agreed, they did, and it was a big success."

"The dream," says Tartler, "that the Children's Inn would become a national model has become more and more true. We continue to reap the benefits of national recognition because of the type of service we provide here. Some of this may result from having been on the *Today* show twice.

"As we continue to meet the ongoing needs," he says, "our 'wish list' continues to grow."

Tartler mentions the number one priority—automatic doors for the two sets of front doors and the residents' evening access door.

"Also, we would like to develop the exterior of the property to match the beauty of the interior. We would like a special playground, barbecue grills, picnic tables, a gazebo, park benches, plantings, as well as wildlife feeding stations.

"These kids," he says, "spend weeks and months inside institutions, so we would like to provide them with an opportunity to spend some time outside. We are in the planning stages now, and estimate the cost to be around \$118,000."

On Feb. 7, a board change at the inn took place. The original two boards—operating and fund development—merged into one board of directors. The new board, consisting of 25 members, is responsible for establishing an endowment fund that will provide the inn with annual operating expenses.

Tartler says NIH contributes laundry service, maintenance, utilities, and shuttle service, in addition to the land it has already given. However, funds for operating costs are required to support the inn, hence the need for an endowment fund.

"Outside generosity to the inn has been most gratifying," Tartler reports.

A-Wing Addition Rises on East Side of Bldg. 10

By Rich McManus

A major addition is currently being grafted atop the four existing floors of Bldg. 10's A wing; the \$11 million fast-track project, due for completion in fall 1991, will add new NCI and NIAID laboratories to the fight against AIDS.

The first of two construction phases—erection of the steel superstructure—began last March and will soon be completed. Phase two has just begun and will result in state-of-the-art laboratories whose flexibility and space are unequaled in the Clinical Center.

"It's pretty hard to start a construction project four stories up from the ground," said Donald A. Sebastian, the project officer for the Division of Engineering Services who is overseeing completion of the wing's first phase. "It's a very intricate, exacting type of construction—we call it our Swiss watch.

"The whole project, from design of the addition to finished construction, will take a little more than 2 years," he contin-

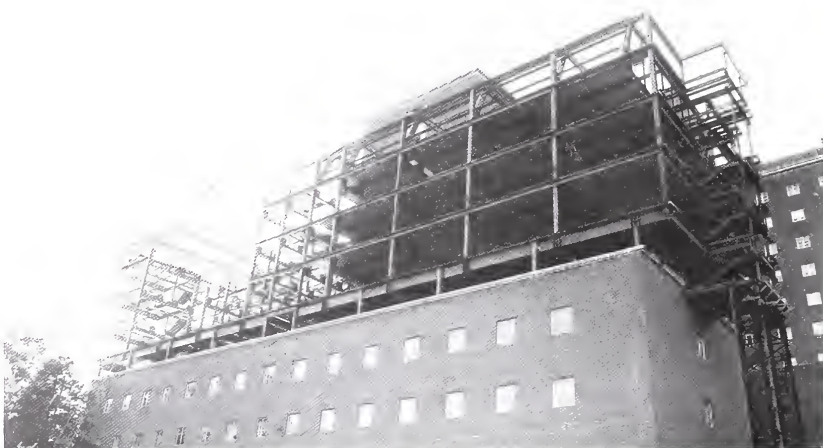
ued. "For a job of this size and intricacy, that's pretty fast."

The B1, B2, first and second floors of the existing A wing will remain unchanged, aside from some work to the loading dock area. The roof of the current A wing will become mechanical or "interstitial" space, allowing for pipes and ducts. The next three stories will align with existing floors in the adjacent B wing and will be worker-occupied. The top floor will be entirely devoted to mechanical space.

The first usable floor of the addition will be utilized for office space divided in thirds for NCI, NIAID and the assistant hospital administrators from the CC.

The next two floors—comprising some 11,000 square-feet each and including 28 laboratories of single, double and triple modular configuration with their necessary support—will be occupied by NCI and NIAID labs.

These two floors can each accommo-



The steel superstructure of the new AIDS Research Facility atop the Bldg. 10 A wing is now complete. Two of the addition's floors will include NCI and NIAID laboratories dedicated to research on human immunodeficiency virus.

date 33-35 single modules, each 11 feet wide. About one quarter of these will operate as biosafety level 3 (BL3) laboratories, needed for some retrovirus procedures. In these labs, workers must enter via an anteroom instead of directly from the corridor; in some cases, material exiting the labs must traverse a pass-through sterilizer. The remaining modules will be biosafety level 2 (BL2) labs, which can be entered directly from the corridor, and can be easily converted to BL3 labs if the need arises in the future.

Most-Cited Women in Science Have NIH Ties

By N. Sue Meadows

Eight of the 10 women recently identified by the Philadelphia-based Institute for Scientific Information (ISI) as the most-cited women in science have received NIH research grants and have served as reviewers for the NIH peer review system. Three of these scientists are supported by an NIH MERIT Award, which provides extended support to foster the continued research achievements of distinguished scientists. At least two have worked in the intramural labs on the NIH campus.

According to the ISI, the list of the 10 most frequently cited women in science was compiled from the files of ISI's *Science Citation Index* through a computer study that counted how often each scientist's published work had been cited in articles written by other scientists.

The scientist most cited was Dr. Flossie Wong-Staal, who is an NIAID and NCI-supported researcher at the University of California, San Diego, and was previously at NIH as an intramural scientist in NCI's Laboratory of Tumor Cell Biology. Her work was cited by other authors 7,772 times from 1981 to 1988. Her most-cited paper is "Human T-

lymphotrophic retroviruses," published in the British journal *Nature* in 1985.

In addition to receiving NIH research support, Wong-Staal has served as a peer reviewer for DRG's AIDS and related research-3 study section during the June 1989 round of initial review. Also, she is a member of the NIH reviewers reserve, a centralized file of consultant reviewers available to all NIH chartered scientific review committees to assist in the peer review of grant and cooperative agreement applications and contract proposals.

The third most-cited scientist is Dr. Philippa C. Marrack, an immunologist who works in molecular biology at the National Jewish Center for Immunology and Respiratory Medicine in Denver, whose work has been cited 6,462 times. She served as a member of DRG's immunobiology study section from July 1980 to June 1984, and has received research grant support from NIAID.

Three of the 10 scientists, Drs. Mary Jane Osborn of the University of Connecticut Health Center, Joan A. Steitz of Yale University, and Marilyn S. Kozak of the University of Medicine and Dentistry, Newark, N.J. (UMDNJ), have provided expertise to DRG's molecular biology study section in the initial review of grant applications. Osborn, whose work was cited 4,366 times, is currently a member of the DRG advisory committee. She has also served on the National Advisory General Medical Sciences Council and the Board of Scientific Counselors of NHLBI. She has grant support from NIGMS and NIAID.

Steitz, a biochemist at Yale and a Howard Hughes Medical Institute investigator, has 3,282 citations for her articles. She is an NIGMS-supported MERIT awardee and has received grant support from NCI and NIAID as well. From 1976 to 1980 she served on the NIADDK Board of Scientific Counselors.

Kozak, who studies messenger RNA and eukaryotes (cells with nuclei), has

3,107 citations to her credit. Besides currently serving as a DRG study section member, she is an NIAID and NIGMS-supported investigator at the Robert Wood Johnson Medical School, UMDNJ.

Dr. Ellen S. Vitetta, who helped discover immunotoxins and whose work has been cited 3,098 times, is an NCI MERIT award recipient. Her most-cited paper, "Cell surface immunoglobulin II: Isolation and characterization of immunoglobulin from mouse splenic lymphocytes," was published in the *Journal of Experimental Medicine* and is 19 years old. A scientist at the University of Texas Southwestern Medical Center, Dallas, she has also received grant support from NIAID and served as a reviewer for DRG.

Dr. Candace B. Pert is a former intramural scientist with the National Institute of Mental Health who in the 1970's helped identify natural pain killers produced by the brain. Her work has been cited 2,918 times. She has received grant support from NCI and NIGMS of NIH, and NIDA of ADAMHA. She was a member of DRG's neurology B study section from 1981 to 1984.

Dr. Marilyn Gist Farquhar, a researcher at the University of California, San Diego, who studies cell biology and experimental pathology, was the ninth most-cited with 2,316 citations. She is an NIDDK supported MERIT award recipient and also has received support from NCI and NIGMS. She has served on two DRG study sections: cellular biology and physiology from 1975 to 1979, and pathobiochemistry from 1986 to 1990.

The remaining two members of the 10 women of science, Drs. Julia Margaret Polak of Hammersmith Hospital and Sheila Sherlock of the Royal Free Hospital, are researchers in London, England, and have not served on NIH peer review committees nor received NIH grant support.

NIH Notes for November 1990—February 1991

HONORS AND AWARDS

Dr. Robert M. Chanock, chief of NIAID's Laboratory of Infectious Diseases, was selected winner of the 1990 ICN International Prize in Virology. The annual prize, an engraved crystal prism and \$50,000 in cash, honors his career and work during the last 35 years including discovery of several medically important viruses, research on infectious viruses especially in childhood diseases, and work in vaccine development ...

Dr. Igor Dawid, chief of NICHD's Laboratory of Molecular Genetics, received the Distinguished Presidential Rank Award for his "pioneering research accomplishments in developmental biology and molecular genetics leading to new approaches to the cure of gene disorders" ... **Robert T. Dillon**, assistant director for policy and evaluation in the Division of Personnel Management, OD, received the All Star Team Award from the federal section of the International Personnel Management Association for his leadership in designing and implementing the new pay program; and for his contributions to NIH efforts to obtain legislative approval of a pay and personnel system for senior scientists ...

Dr. Cheng Dong of the Biomedical Engineering and Instrumentation Program, NCRR, received the 1990 Melville Medal of the American Society of Mechanical Engineers as first author of the best original paper presented for discussion and publication: "Passive Deformation Analysis of Human Leukocytes" ...

Dr. Charles H. Evans, chief of the tumor biology section in NCI's Laboratory of Biology and a captain in PHS, was awarded at the 9th annual meeting of the Association of Military Surgeons the Sir Henry S. Wellcome Medal and Prize for his essay on "Leukoregulin: A New Biotherapeutic Cytokine in the Search for More Effective Antiviral Pharmacologic Agents" ... **Evelyn Farinas**, supervisor of Oncology Pharmacy, Clinical Center, won the Hospital Pharmacist of the Year award for 1990 from the D.C. Society of Hospital Pharmacists. Last year's winner, Karim Calis, is also a CC Pharmacy employee ... **Dr. Anthony S. Fauci**, NIAID director, received the First International Chiron Prize for Biomedical Research during a ceremony in Rome, Italy. He also received the degree of doctor of medicine and surgery, honoris causa, from the Universita di Roma,

"La Sapienza," in Rome. He also became the 17th recipient of the "Presidential Award of the New York Academy of Sciences, Supported by A. Cressy Morrison," for his "outstanding accomplishments in science and service in the cause of science" ... **Stephen A. Ficca**, director of NHLBI's Office of Administrative Management, received the Meritorious Presidential Rank Award "for outstanding leadership and initiative which have made significant contributions to the improved management of the programs at the National Institutes of Health" ... **Dr. Robert C. Gallo**, chief of NCI's Laboratory of Tumor Cell Biology, recently shared the 1990 Karl Landsteiner Memorial Award with Dr. Luc Montagnier of the Pasteur Institute; the scientists were honored at the joint meeting of the American Association of Blood Banks and the International Society of Blood Transfusion in Los Angeles. Gallo also recently gave the following distinguished lectures: the 19th Maxwell Finland Lecture at the annual meeting of the Infectious Diseases Society of America held in Atlanta; the Yuri Ovchinnikov Memorial Lecture at the Shenyakin Institute of Bioorganic Chemistry in Moscow; the Shell Lecture at Oxford University; and the Sir William Osler



Drs. Robert C. Gallo (l) and Luc Montagnier (r) received the AABB 1990 Karl Landsteiner Award, which was presented by AABB president Toby L. Simon.

Lecture at McGill University. He also delivered the Luther Terry Lecture at the U.S. Public Health Service Professional Association meeting in Anchorage ... **Dr. Alfred G. Gilman**, an NIGMS grantee, recently received the 1990 Steven C. Beering Award for his outstanding achievement in biomedical science. The \$10,000 award is given annually

by Indiana University ... **Dr. Fann Harding**, assistant to the director of the Division of Blood Diseases and Resources, NHLBI, was awarded the American Association of Blood Banks Distinguished Service Award in recognition of her leadership in initiating and establishing the Transfusion Medicine Academic Awards program and maintaining it as a major force in transforming transfusion medicine ... **Dr. David I. Hoult**, who heads the nuclear magnetic resonance instrumentation group in the Biomedical Engineering and Instrumentation Program, NCRR, is the first recipient of the Award for Achievements in the Field of Magnetic Resonance for "his invention of rotating frame imaging and his many innovations in NMR probes, receivers, magnets, and computational procedures which have had widespread impact on the field" ... **Dr. Carl Kupfer**, NEI director, received the Distinguished Rank Award "for sustained extraordinary accomplishment in planning, developing, and managing a nationally and internationally acclaimed vision research program" ... **L. Earl Laurence**, NIDDK executive officer, was honored with the National Kidney Foundation's George M. O'Brien Award in recognition of his long-time support of coordinating foundation programs with NIDDK ... **Dr. Donald A.B. Lindberg**, NLM director, received the Meritorious Presidential Rank Award "for instituting at the National Library of Medicine sophisticated and successful information programs and services responsive to the needs of the nation's health professionals in dealing with biotechnology, AIDS, and other contemporary issues in medicine" ... **Julia Lobotsky**, head of the reproductive biology section of the Reproductive Sciences Branch, Center for Population Research, NICHD, received two awards from organizations concerned with the reproductive sciences. She was given a Lifetime Achievement Award at the Endocrine Society's 72nd annual meeting in Atlanta in recognition of "her tireless efforts in support of biomedical research, relentless pursuit of excellence and unending empathy for investigators." She was also presented with the Distinguished Service Award from the Society for the Study of Reproduction at its 23rd annual meeting in Knoxville for her "invaluable contribution to the membership of the SSR and the fields of reproductive biology and endocrinology as a whole" ... **John D. Mahoney**, director of NIH's Office of Administration, received the Meritorious Presidential Rank Award "for outstanding leadership and management skill

(See NIH Notes p. 27)

NIH Notes (continued from p. 26)

in restructuring NIH station support procurement operations, achieving significant cost savings, and developing unprecedented levels of regulatory compliance while maintaining system responsiveness to research needs" ...

... **Dr. Malcolm A. Martin**, chief of NIAID's Laboratory of Molecular Microbiology, received a Meritorious Presidential Rank Award "for exceptional leadership and sustained accomplishments in research on the retrovirus that causes AIDS and for important scientific studies relating to RNA and DNA viral genome structure of biological functions which have advanced the use of recombinant DNA technology" ... **Carolyn G. McHale**, chief of the NIAMS Scientific Information and Data Systems Branch, was the recipient of the 1990 Harriet E. Worrell Award from Drexel University for "a distinguished career in medical research and information systems." The award is given annually to outstanding alumni of the university ...

Dr. Ralph F. Naunton, director of the Division of Communicative and Neurosensory Disorders, NIDCD, was the Carhart Memorial speaker at the 1990 annual meeting of the American Auditory Society held in Seattle. Before coming to NIH he was chairman of the department of otolaryngology at the University of Chicago ... **Dr. William F. Paul**, chief of the Laboratory of Immunology, NIAID, was one of the 24 internationally renowned biomedical scientists who spoke recently at the Irvington Institute for Medical Research's 75th anniversary symposium "Immunology in the 21st Century" in New York City. His theme was "Lymphokines: Molecular Mediators of the Immune Response" ... **Dr. Philip A. Pizzo**, chief of NCI's Pediatrics Branch, was honored in the January issue of *Washingtonian* magazine as a "Washingtonian of the Year." He shared the honor with three congressional wives, Camala Walgren, Debbie Dingell, and D. Chris Downey, who were the officers of the Friends of the Children's Inn, a nonprofit organization that helped raise funds to build the inn ...

Dr. Eric Ravussin, an NIDDK scientist at the Phoenix Epidemiology and Clinical Research Branch in Arizona, received the Andre Mayer Award for outstanding research in obesity at the 6th International Congress on Obesity in Kobe, Japan. He came to Phoenix from Switzerland in 1984 to set up a respiratory chamber, the first in the United States, to measure daily metabolic rates in relationship to body weight changes ... **Dr. Matilda W. Riley**, associate director of NIA's Behavioral and Social Research Pro-

gram, received the Meritorious Presidential Rank Award "for outstanding leadership and significant accomplishment in the establishment of a national and international extramural program of social and behavioral research at the National Institute on Aging" ... **Dr. Gustavo C. Roman**, chief of NINDS' Neuroepidemiology Branch, has been named coeditor of *The Journal of Tropical and Geographical Neurology*, a quarterly peer-reviewed journal newly created by the research group on tropical neurology of the World Federation of Neurology ... **Dr. Marcel Salive**, an epidemiologist in NIA's Epidemiology, Demography, and Biometry Program, has received the Jay S. Drotman Award from the American Public Health Association ... **Dr. James B. Snow, Jr.**, NIDCD director, gave keynote addresses at the American Indian Research Symposium in Montana and the centennial address at the Alexander Graham Bell Association for the Deaf ... **Dr. Novera Herbert Spector**, NINDS health scientist administrator, recently received a medal commemorating the 100th anniversary of the Polish Physiology Society in recognition of his contribution to basic research in physiology, especially on interactions among the nervous, endocrine and immune systems ... **Dr. Allen Spiegel**, NIDDK acting scientific director, recently gave the 1990 Jacobaeus Lecture in Oslo, Norway. He spoke on the structure and function of G proteins, which act as intermediaries in cell signaling.

APPOINTMENTS AND PERSONNEL CHANGES

Dr. James Anderson, former head of the department of molecular genetics at Crop Genetics International in Hanover, Md., has been appointed a program administrator in the Genetics Program, NIGMS. He will handle grants in the areas of physiology of gene control and RNA processing ... **Dr. David Benton** has joined the National Center for Human Genome Research as assistant to the director for scientific data management to oversee the "informatics" program to develop computer technologies able to meet the needs of the genome project. He comes to NCHGR from the West Coast technology company IntelliGenetics, Inc., where he managed the DNA sequence database GenBank ... **Dr. Carlos E. Caban**, program director for cancer control research in the Division of Cancer Prevention and Control, NCI, has been named extramural programs policy officer in the Of-

fice of Extramural Research, Office of the Director, NIH. He is responsible for reviewing, evaluating and advising on current and proposed regulations, policies and procedures used in management of NIH-ICD extramural research and development programs, with emphasis on use of cooperative agreement and contract mechanisms and peer review policies and procedures ... **Dr. Eliezar Dawidowicz**, an associate professor of physiology at Tufts Medical School, has been appointed a program administrator in the Cellular and Molecular Basis of Disease Program, NIGMS. He will handle grants in the areas of membrane and lipid metabolism and membrane transport ... **Carlos M. Delgado** has joined the Division of Equal Opportunity as chief of the Equal Opportunity Branch. In his new position, he works to foster and promote equal opportunity principles throughout NIH ... **Marian Enr**, most recently NIA's deputy information officer, has been appointed information officer for the National Institute of Neurological Disorders and Stroke. She comes to NINDS with 14 years of experience in medical writing, media relations and public information at NIMH and NIH ... **Raymond Fleming** has been named information officer for DCRT. He comes from NINDS, where he was deputy information officer ... **Dr. Steven J. Hausman**, deputy director of the NIAMS extramural program, has been appointed NIAMS' first deputy director ... **Dr. Richard Havlik** has been named associate director of NIA's Epidemiology, Demography, and Biometry Program. He will direct epidemiology studies that look at aging processes and identify differences between "usual aging" and the onset of diseases ... **Colleen Henriksen**, chief of the DCRT Information Office, has been appointed chief of the Clinical Center Communications office ... **Dr. Caroline Holloway**, head of the biological structure section of the Biomedical Research Technology Program, NCRR, and executive secretary to the biomedical research technology review committee, has been named director of the Office of Science Policy, NCRR. This newly organized office includes both extramural and intramural responsibility for program planning, analysis and evaluation; legislation, and science policy within the office of the director of NCRR ... **Dr. Joye F. Jones**, chief of the genetics of growth and differentiation section of NIGMS Genetics Program since 1989, has been named deputy associate director for

(continued on p. 28)

NIH Notes (continued from p. 27)

program activities, NIGMS ... **Dr. Lewis L. Judd**, director of NIMH since 1988, has recently returned to University of California, San Diego School of Medicine as chairman of the department of psychiatry. During Judd's tenure at NIMH, national research initiatives were implemented in three key areas: schizophrenia, neuroscience, and child and adolescent mental disorders. A fourth project, a research plan to improve the care of individuals with persistent and severe mental disorders, is in the final stages of development. Dr. Alan I. Leshner, NIMH deputy director, will serve as acting director of the institute while a search for a new director is conducted ... **Dr. Dennis E. Leszczynski**, a senior research scientist and executive director of the Harlan E. Moore Heart Research Foundation, a private not-for-profit corporation affiliated with the University of Illinois, has joined the Division of Research Grants as an executive secretary in the Referral and Review Branch ... **Dr. G. Iris O'Brans** has been appointed chief of the Extramural Programs Branch in the Epidemiology and Biostatistics Program, Division of Cancer Etiology, NCI ... **Christine Wisdom** has been named NIGMS deputy executive officer. She has worked at NIH for the past 14 years. Most recently, she was on a 20-month detail from the Division of Legislative Analysis to the Labor/HHS/Education subcommittee of the House of Representatives committee on appropriations ... **Dr. Rosemary Yancik**, a medical sociologist with a longstanding interest in aging, has joined the National Institute on Aging as assistant director for liaison and applied research on aging. Her research interests have focused on the areas of cancer and aging. She was in the Office of Extramural Research, OD, before joining NIA. She also held several positions at NCI, including assistant director for centers and community oncology, Division of Cancer Prevention and Control. She joined NIH in 1978. In her new job she will help develop collaborative programs to investigate how cancer and other diseases affect the older population.

RETIREMENTS

Regina Dowling retired from the department of transfusion medicine at the Clinical Center. She had worked at NIH for 27 years. She first came to NIH in 1963 as a part-time

nurse and finished her career at the CC as a patient apheresis supervisor. She plans to pursue other interests such as volunteer work in her church and community and to travel with her husband ... **Dr. Michael M. Frank**, chief of NIAID's Laboratory of Clinical Investigation, retired Dec. 1 to become professor and chairman, department of pediatrics at Duke University Medical Center. His research interests, broadly described, involved the relationship between immune mechanisms in host defense and immune damage in the development of disease. His pursuits in this area led him to examine how these processes interrelate with immune complexes and, ultimately, with complement activation. Also notable in Frank's NIAID career was his ability to recognize talent among those who applied for positions in his lab and, in addition, to nurture the development of his staff members. His former staff fellows now head major academic medical units in infectious diseases, hematology, allergy/immunology, rheumatology, dermatology and pulmonary medicine ... **Dr. Preston A. Littleton, Jr.**, NIDR deputy director and PHS deputy chief dental officer, retired on Sept. 17 to become executive director of the American Association of Dental Schools ... **Dr. Paul O'Brien**, acting director, NEI Intramural Research Programs and chief, section of cell biology, Laboratory of Retinal Cell and Molecular Biology, retired Sept. 1, his 30th anniversary with NIH, and his 20th with NEI. He plans to keep in touch with the scientific community through his new job at a private company that helps researchers prepare grant applications ... **Ira "Robbie" Robinson**, supply clerk in the Management Services Branch, NIAID, has retired after 34 years at NIH. In 1957 he began his career at NIH in the Clinical Center housekeeping unit. Five years later he transferred to NIAID. He is looking forward to spending more time with his family and also plans to do some fishing ... **Dr. Jesse Roth**, scientific director for NIDDK's Division of Intramural Research since 1981, retired in December 1990. His 27 years at NIH have been marked by seminal work on hormones and their receptors. He has had an important role in helping young investigators around the world, expanding endocrine research to centers in Europe, Israel and Japan as well as in the United States. He has moved to the Johns Hopkins School of Medicine, where he is professor of medicine and gerontology.

DEATHS

Geraldine "Gerri" Brammer, died Oct. 17. She was an EKG technician in CC since 1978 and worked at NIH for the past 17 years ... **Clara Chesney Crouch**, 101, died Jan. 16 in Silver Spring. She worked at NIH from 1946 until 1957 as a clerk ... **Dr. Joseph W. Cullen**, 53, former deputy director of the Division of Cancer Prevention and Control, NCI, died of a brain tumor Nov. 24 at St. Luke's Hospital in San Francisco. He had left NIH in July 1989 to become director of the AMC Cancer Research Center in Denver. During his NCI career, he directed the institute's program to eliminate cigarette smoking, which gave major impetus to federal anti-smoking efforts ... **Levi Dargan**, a computer program analyst in the Division of Computer Research and Technology, died Dec. 29. He had served the division's Computer Center Branch for more than 21 years. He began his career at DCRT as a computer operator in 1969. After being promoted to computer programmer in the program support section, he worked closely with NIH accounting systems to set up computer programs that would run throughout the night. He was active in his community and his church ... **Roberta Pierce Davis**, 69, an executive secretary for 20 years at NIH, died of cancer Jan. 24 at a hospital in Hanover, Pa. In 1981 she retired from the National Institute of Arthritis and Musculoskeletal and Skin Diseases ... **Dr. Kenneth Fitch**, a health scientist administrator in the Division of Research Grants, passed away on Dec. 4 of cancer. He was executive secretary in the special review section of DRG's Referral and Review Branch. His NIH career began in 1981 where he became an expert consultant with NCI. In 1987 he became an employee of NIAID, later transferring to NHLBI, and in 1989, he joined DRG ... **James U. Genies**, 78, a retired employee at NIH, died of heart disease Jan. 14 at his home ... **Frank G. Hickerson**, 65, a retired NIH architect, died Dec. 1 at his home after a heart attack. He worked at NIH for 25 years before retiring ... **Mary Clifford "Maureen" Hornish**, 60, who had worked as a psychiatric nurse at the National Institute of Mental Health, died of cancer Nov. 14 in Bedford, Mass. ... **Dr. David Lackman**, 79, a research scientist in serology and virology at Rocky Mountain Laboratory, NIAID, in Hamilton, Mont., died Nov. 3 in Helena after a long illness with cancer. He worked at the RML from 1941 un-

til his retirement in 1966. Since 1977 he had been a volunteer legislative lobbyist for the Montana Health Association ... **Dr. Patricia McGovern**, 54, a researcher who specialized in kidney and liver ailments, died of kidney and heart ailments Jan. 16 at Suburban Hospital. She was a medical researcher who worked at home; she also worked for physicians in private practice and at NIH ...

Charles Bogart Myers, 70, a retired management analyst with NIH, died of congestive heart failure Nov. 18 at his home. He came to NIH in 1961 to work in the Office of the Director and later as management analysis officer at NIAID. He retired in 1978 ...

Dr. Louis J. Olivier, known for his early schistosomiasis research at NIAID, died in Chapel Hill, N.C., on Nov. 16. In 1946, after completing service in the Army's malaria survey unit, he joined the PHS, where he headed the host-parasite relations section of the lab that was later to evolve into NIAID's Laboratory of Parasitic Diseases. Following his retirement in 1966, he continued in the parasitology field working for 5 years as regional advisor on parasitic diseases for the Pan American Health Organization. He then spent 2 years in Geneva as a consultant to the World Health Organization ... **Robert J. Schultheisz**, a systems analyst in the Office of Computer and Communications Systems, NLM, died Nov. 28 following surgery for cancer. He had worked at NLM since 1970, and for the federal government for more than 30 years. At NLM, he was initially employed in Specialized Information Services developing databases in toxicology. Most recently he had been part of the Development Branch of OCCS working on the MEDLARS III and the TESS (Technical Services System) projects ... **Dr. Irving "Ozzie" Simos**, 68, a psychologist who retired from the Division of Research Grants in 1987, died Dec. 9 of amyotrophic lateral sclerosis. He had a distinguished and well-respected career at NIH that spanned 30 years. He held positions that included executive secretary of the small grants section at NIMH, and deputy chief of the Referral and Review Branch, DRG. After his retirement from NIH, he pursued his hobby of violin playing and volunteered as a counselor ... **Jane Stafford**, 91, a science writer and retired assistant director of information at NIH, died of cardiac arrest Jan. 11 at Menno-Haven nursing home in Chambersburg, Pa. She came to Washington in 1928 as a science and medical writer and joined the staff at NIH in 1956. She retired in 1971.



Rep. Silvio O. Conte, (R-Mass.), 69, died Feb. 8 at the Clinical Center of extensive bleeding in the brain stemming from the progression of prostate cancer, for which he underwent surgery in 1987. Conte was the senior Republican on the House appropriations committee and was beginning his 17th term in Congress. Throughout his long legislative career he was a strong, effective supporter of medical research. The new Child Health and Neurosciences Facility, Bldg. 49, for which he worked for more than a decade to fund, has been named in his honor. At the groundbreaking ceremony on Oct. 4, 1988, (pictured above) he called it "the proudest achievement in all my years in office."

Right Conte hugs Clinical Center patient Brianne Schwantes of Milwaukee at the groundbreaking ceremony for Bldg. 49.



Recent Books of Interest To NIHA Members

Dr. Victoria A. Harden, *Rocky Mountain Spotted Fever: History of a Twentieth-Century Disease*. Baltimore: Johns Hopkins University Press, 1990.

Prepared for the National Institute of Allergy and Infectious Diseases, this book traces the history of research on Rocky Mountain spotted fever (RMSF) from the late 19th century, when it was first identified as a distinct disease, to the present. Research on RMSF represents one of NIH's oldest continuous investigations and one of the earliest federal-state cooperative research efforts. Harden is the Director, NIH Historical Office and DeWitt Stetten, Jr. Museum of Medical Research and is the author of *Inventing the NIH: Federal Biomedical Research Policy, 1887-1937*, also published by Johns Hopkins.

Stephen P. Strickland, *The Story of the NIH Grants Programs*. Lanham, Md., and London: University Press of America, 1989.

Well known as the author of *Politics, Science, and Dread Disease*, Stephen Strickland has surveyed in this book the emergence of federal support for biomedical research after World War II as embodied in the grants program of the NIH. The book is based on oral histories with participants who shaped the program and conveys well the flavor of this period of NIH expansion.

NIH Retrospectives



SPRING 1951

The NIH Hamsters presented a second hit show titled "Carmen Cold" ... NIH scientists made substantial contributions to a recently issued booklet *Health Services and Special Weapons Defense*, prepared by the Health Resources Office, NSRB. The 260-page booklet explains the effects of weapons ranging from atom bombs to nerve gases and outlines the functions, responsibilities and organization of civil defense health services ... Dr. Jack Masur, Chief of the Research Facilities Planning Branch at NIH, has been appointed Chief of the Bureau Services, PHS, succeeding Dr. R.C. Williams who retired ... Investigations by NIH scientists have linked the A group of Cocksackie viruses with herpangina, a mild illness of widespread occurrence, especially among children, which has caused a fear of polio because of similar symptoms. Prior to the NIH studies, however, physicians had found its symptoms puzzling and mistook herpangina for other throat conditions.



SPRING 1961

A Joint Committee on Cancer Information has been established by the National Cancer Institute and the Cancer Control Branch, Bureau of State Services, to coordinate the planning, production, and distribution of public and pro-

fessional information material relating to cancer research and control ... Dr. Luther L. Terry, 49, Assistant Director of the National Heart Institute, has been appointed Surgeon General of the Public Health Service, by President Kennedy ... The National Institute of Arthritis and Metabolic Diseases observed its tenth anniversary in a day-long program of activities including a special "Report to the Nation" on its 10 years of research.



SPRING 1971

A cluster of our new buildings was dedicated on March 1 at the National Institute of Environmental Health Sciences Center, Research Triangle Park, North Carolina. Dr. David P. Rall, associate scientific director of NCI, supervising experimental therapeutic programs, has been named the new director succeeding Dr. Paul Kotin ... President Nixon creates a new group to plan and direct expanded cancer research effort ... HEW Secretary Elliot L. Richardson visited NIH in mid-March and has a question

and answer session with employees ... A dedication ceremony was held at the Fogarty International Center for the unveiling of a bronze sculpture of the late Congressman John E. Fogarty of Rhode Island.

The NIH Record

U.S. Department of Health, Education, and Welfare
September 14, 1979
Vol. XXX
No. 18

National Institutes of Health

SPRING 1981

Several hundred Federal arrest warrants have been recently issued for employees who have failed to pay the fines on their traffic tickets ... President Carter's fiscal year 1982 request for NIH is \$3,848,689,000, a net increase of \$255 million above the 1981 level being recommended by the Administration ... "Graduates" of Dr. Christian B. Anfinsen's school—his intramural laboratories—gathered in Masur Auditorium to participate in an International Symposium on the Contributions of Chemical Biology to the Biomedical Sciences ... An exhibit and bust honoring Dr. Charles R. Drew, known as the "Father of the American Blood Bank," was unveiled at NIH, making it the first permanent exhibit honoring a black physician on the NIH campus.



This photograph is from the prints and photographs collection at the National Library of Medicine. The curator, Lucinda Keister, would like to know if anyone recognizes the participants and event. Please send details to *Update*.

Attention

NIHAA wants to hear from its members. Please type or print your note for a future issue and mail it to:

Harriet R. Greenwald, Editor
NIHAA Update
 9101 Old Georgetown Rd.
 Bethesda, MD 20814

 Name

 Home address

 Home phone

 News. Include dates/position at NIH and photo if possible.

 Suggestions for newsletter

What is Happening with the NIH Alumni Association?

In March, the board of directors elected officers for 1991-92. They are president, Dr. Joe R. Held; vice president, Dr. John F. Sherman; and secretary-treasurer, Calvin B. Baldwin Jr.

The association has two events scheduled for May. The first is a reception at the AAP/ASCI/AFCR meeting on Saturday, May 4, from 5 to 7 p.m. in the Madonna Seattle Sheraton Hotel and Towers. Please attend if you are at the meeting. The second event is a reception to honor the visiting scientists at NIH from Italy, which will be on Tuesday, May 21, at 7 p.m. It will be sponsored by the Wash-

ington area chapter of NIHAA. Invitations will be sent in April.

International and local domestic chapters are being established. Dr. James A. Pittman Jr., Dean, University of Alabama School of Medicine, is heading our first local chapter. On Apr. 5, Dr. J. Edward Rall, NIH deputy director for intramural research, will be the guest speaker at the first meeting. We will have pictures and coverage in our next *Update*. Letters have been sent to more than 20 foreign countries asking former NIH'ers about establishing chapters. The response so far has been enthusiastic. We will have more

specifics in the next newsletter.

As part of Research Festival '91, NHLBI will sponsor an NIH symposium Monday, Sept. 23, to honor a distinguished alumnus. More information and a description of the program and other related activities will appear in the summer newsletter.

Reaction to *Update* continues to be complimentary, but we would like to hear more from our members. We invite you to send the above clip-out form with your news. Please include comments and suggestions both for the association and for the newsletter.



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NIHAA UPDATE

**If You Are Not Yet A
Member Of The NIHAA
[Clip and mail]**

NIHAA Office
9101 Old Georgetown Rd.
Bethesda, MD 20814

I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

_____ (Title) _____ (Organization)
from _____ to _____ My membership dues of \$ _____
(Years)

are enclosed payable to FAES/NIHAA.

(Please type or print)

Full Name: _____

Title: _____

Place of Employment if applicable: _____

Mailing Address: _____

City, State, and Zip Code: _____

Telephone: _____

NIHAA Update
9101 Old Georgetown Rd.
Bethesda, MD 20814

If you are in Seattle for the AAP/ASCI/AFCR meetings please attend the NIHAA reception on Saturday, May 4, 1991, from 5 to 7 p.m. in the Madrona Room, Seattle Sheraton Hotel and Towers. Past, present NIH personnel, NIHAA members and guests are all invited.

Memberships

Please indicate membership desired:

Type	Annual Dues
<input type="checkbox"/> Full (for past NIH employees only)	\$ 25.00
<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

Donations or bequests (tax deductible in USA) are welcome.
Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at NIH.
Present NIH staff are invited to join as associate members.

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Director Takes Formal Oath

Healy Makes History, Pledges Commitment at Swearing-In Ceremony

By Carla Garnett

History was made June 24 as Dr. Bernadine Healy formally took the oath of office as NIH director. Greeted at her swearing-in ceremony by President Bush and DHHS secretary Dr. Louis Sullivan, NIH's first woman director had been unanimously confirmed for the position by the Senate Mar. 21 and officially took over the reins of NIH in April.

"Dr. Healy's appointment reinforces the commitment by the President and me to fully tap into the reservoir of women and minorities," said Sullivan, in opening remarks at the swearing-in ceremony. "This also signals our commitment to providing strong leadership in biomedical research."

Sullivan said NIH must have dynamic, visionary leadership at its helm. "We have found that person in Bernadine Healy," he said, adding that Bush made

(See *Swearing-In* p. 11)



Dr. Bernadine Healy takes the constitutional oath of office June 24 that formally recognizes her position as NIH director. DHHS secretary Dr. Louis Sullivan (l) administers the oath while Healy's husband Dr. Floyd Loop holds the Bible, and President Bush and Healy's daughters Bartlett (second from l) and Marie (c) look on.

So Many Stories, So Little Time

NIH Historian Harden Honored for Book

By Rich McManus

NIH's historian Dr. Victoria A. Harden, who has just won the Henry Adams Prize of the Society for History in the Federal Government for her book *Rocky Mountain Spotted Fever: History of a Twentieth-Century Disease* (Baltimore: Johns Hopkins University Press, 1990), has a problem that has afflicted perhaps every historian from time immemorial—time itself.

While there often tends to be too much of it in the past, the present also conspires to keep the historian interminably engaged.

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NIHAA Members Invited to Alumni Symposium

The first morning of NIH Research Festival '91—Monday, Sept. 23—has been designated National Heart, Lung, and Blood Institute Alumni Day. This event is being celebrated with a symposium sponsored by NIH and NHLBI in honor of Dr. Joseph L. Goldstein, recipient of the NIH 1991 Distinguished Alumni Award. Dr. Edward Korn, chairperson of the symposium and director of NHLBI's Division of Intramural Research, has written the following invitation to NIHAA members:

In planning the second annual NIH Alumni Symposium, we established two

(See *Symposium* p. 5)

Howard's Kenneth Olden Named NIEHS Director

The director of Howard University's Cancer Center, Dr. Kenneth Olden, has been named director of the National Institute of Environmental Health Sciences. In addition to directing NIEHS, Olden will also be director of the National Toxicology Program, a cooperative effort within DHHS to strengthen the federal science base in toxicology and to coordinate the toxicological research and testing activities of four PHS agencies. Both these positions were opened when Dr. David P. Rall retired last October. The positions have been held on an acting basis by Dr. David G. Hoel, who is director of NIEHS' Division of Biometry and Risk Assessment.

Olden comes to the NIEHS directorship from Howard University College of Medicine, where during the past 12 years he has held a number of managerial and scientific positions. Since 1985 he has served as director of the university's Cancer Center and professor and chairman of the department of oncology, Howard University Medical School.



Dr. Bernadine Healy swears in Dr. Kenneth Olden as NIEHS director on June 18.

Prior to his appointments at Howard, Olden was a research scientist from 1974 to 1979 in the Division of Cancer Biology and Diagnosis, NCI. His major research interest is cancer cell biology, particularly cancer metastasis. Before coming to NIH, Olden spent 4 years as a research fellow and instructor of physiology at Harvard Medical School.

"Our agency is fortunate to have such an outstanding basic scientist and proven leader as NIEHS director," said NIH director Dr. Bernadine Healy. "Dr. Olden's work at NIEHS will impact on every man, woman, and child in the country. I am very pleased for Dr. Olden to be named the first appointment during my tenure as NIH director."

Olden received his B.S. degree in biology in 1960 from Knoxville College, his M.S. degree in 1964 from the University of Michigan, and his Ph.D. in 1970 from Temple University.

In January 1991, Olden was appointed by President Bush to the National Cancer Advisory Board, a position he relinquished when he assumed the NIEHS post. He is a member of the editorial boards of three journals: *Cancer Research*, *Cell Regulation*, and *Journal of the National Cancer Institute*. He is also the author of numerous basic science articles, and while at the Howard University Medical Center held a number of grants from NIH. He published two of the "one hundred most cited" papers in 1978-1979, one of which—on the subject of cancer cell biology—is now deemed a "citation classic."

The NIEHS is the principal federal agency for biomedical research on the effects of chemical, physical, and biological environmental agents on human health. It supports and conducts basic and targeted research focused on the interaction between people and potentially toxic agents in the environment.

Update

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit materials.

Editor's Note

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NIHAA Forum**Lessons from the Past:
The Pied Pipers of
Piltdown***By Dr. Robert G. Martin*

Accounts of the fraud case associated with Rockefeller President Dr. David Baltimore, so much in the news of late, have focused on the personalities of Baltimore, his associate, Dr. Theresa Imanishi-Kari and whistleblower Dr. Margot O'Toole. But the real villain is the system — how scientific research is conducted, how data are selected for publication, how they are popularized and how in the minds of scientists and non-scientists alike they are transmogrified into dogma.

It may not be generally appreciated, but since 1987 at least five other articles besides the one Baltimore coauthored have been retracted from the scientific journal *Cell*. Furthermore, the journal *Nature*, whose editor, John Maddox, commented on Dr. Baltimore's hubris in the Week in Review section of the *New York Times* (Mar. 30) has had its share of retractions. Why?

The answer requires the luxury of distancing the debate from the current scene. One of the most celebrated cases of "fraud" in the history of science occurred nearly 80 years ago. Well over 200 books and articles have been published on "Piltdown man," that phantasm reconstructed from the jaw of an orangutan and the cranium of modern man. It is clear to us today that the bones in question cannot possibly date from the pliocene (pre ice-age) or even the early pleistocene (ice age). But much of the chemical and physical data "proving" this are unconvincing and even internally inconsistent.

Mr. Charles Dawson, an amateur archaeologist and geologist elected to membership of the British "Geological Society" at the early age of 21 for a series of important finds, announced the discovery of a number of fossils in a gravel pit in Piltdown, England in 1912. Among the fauna were parts of a cranium and jaw that Dawson took to Arthur Smith Woodward (later knighted for his work in paleontology), the keeper of fossils for the British Museum.

In announcing the finds, Smith Woodward also presented a model skull he had reconstructed from the remains. While Arthur Keith (also later knighted for his work) and others disputed details of the model and suggested it was that of a young female, few English scientists questioned the assumption that the jaw and cranium were derived from the same animal. Why were they so undiscerning, particularly in view of the fact that a number of paleontologists from France and the United States were vehement in their criticisms?

National pride seems to have been a major factor. Charles Darwin and Alfred Russel Wallace had proclaimed the theory of evolution and now the missing link between ape and man was discovered in the Home Counties and by Englishmen. To the man in the street, the existence of the Piltdown remains became almost as much a part of British history as Queen Victoria herself.

(Lest Americans and Frenchmen feel that patriotism could never influence their scientific thinking, let's remember that it required the intervention of President Ronald Reagan and Premiere Francois Mitterand to resolve the dispute between Robert Gallo and Luc Montagnier as to the discovery of HIV. We might also recall that the scientific value of landing a man on the moon was minimal.)

The excavations at Piltdown constituted a scientific discovery that no newspaper editor could, or should have rejected. It was spectacular, it appeared to verify established theory and it carried the imprimatur of recognized authority. But scientific journals have an obligation to be more critical. Their articles carry the implication of scientific review and approval. In this regard, the journals announcing the Piltdown finds were wanting.

Indeed, speculation was poorly differentiated from fact and time and further discoveries proved unkind to poor Ms. Piltdown. First came Raymond Dart's discovery of *Australopithecus africanus* and its multiple confirmations by Louis Leakey. Then an Englishman, Alvin Marston, discovered a Neanderthal-like skull at Swanscombe that seemed to pre-date Piltdown even though it was clearly more advanced. But Marston was a mere dentist so serious paleontologists paid little attention to his criticisms. Still, no independent example of a Piltdown-like fossil was discovered and further excavations of the original site yielded not a single artifact.

Then in 1953 James Weiner, a South African physiologist, became involved in the case. At age 28 he was a Reader at Oxford (a non-tenured position) in Le Gros Clark's anatomy department. His bibliography at that time contained only a few studies on the physiology of perspiration and a study of air circulation in British air raid shelters. Disturbed by the results of some chemical analyses performed on the Piltdown remains by Kenneth Oakley, Weiner decided to reexamine the Piltdown discovery.

Or did he? Reading Weiner's own account of his investigation makes it clear that from the start he was biased towards the view that the Piltdown skull was not merely a mistake, but a fraud.

(See *Piltdown* p. 4)

Pitldown (continued from p. 3)

Without restating the voluminous circumstantial evidence offered by Weiner and subsequently by others in support of the fraud theory, what new hard facts were uncovered? Amazingly, there were only four pieces of information that justified that label. The first were chemical analyses revealing that the fluoride content of the cranium was consistent with its being late pleistocene at the earliest, while that of the jaw suggests it was modern. These conclusions were confirmed by organic nitrogen analyses. Next, there was the observation that on boring a sample from the canine for chemical analysis it appeared that the coloration of the tooth was entirely superficial. And finally, there was microscopic evidence of artificial abrasion of the molars and canine — the claim by Le Gros Clark that file markings could be identified. There were of course additional questions of sulfate content, etc., but all of these were subject to nonincriminatory interpretations as well.

How hard was this data? In 1959, deVries and Oakley performed further fluoride and nitrogen analyses and in addition carbon-dated the cranium and jaw. Again the fluoride and nitrogen data suggested that the cranium might be late pleistocene but the jaw was modern. Yet the carbon-dating suggested an age of 620 ± 100 years for the cranium and 500 ± 100 years for the jaw, i.e., the jaw and cranium are contemporary and both are modern. Nonetheless, the discussion of the deVries and Oakley paper implies that the carbon-dating data confirm that the cranium is older than the jaw. (Elementary statistical analysis of such data indicates that approximately 30% of the time the jaw would be older than the cranium.) So the age of the fossils remains unclear and none of this confirms fraud.

The conclusion reached by Weiner concerning the coloration of the tooth is best summarized in his own words. It was, he asserted, "in all probability the

well-known paint—Vandyke brown. *It might have been argued that bituminous earth could produce a natural incrustation were it not known that bituminous matter is entirely out of place in a highly oxidized gravel.* [italics added]" In other words, Weiner was making an educated guess, but only a guess. Nonetheless, 14 pages later in his book Weiner's guess turns into, "The manifestly fraudulent elements in the man-ape combination called *Eoanthropus dawsoni* are the filed down molars and canine, the Vandyke brown staining of the latter and the iron-coloration of the jaw." (The argument concerning the coloration of the jaw disappears if the jaw and cranium are of nearly the same age.)

The suggestion that file markings are apparent on the molars is certainly damning. But I could find no evidence that forensic experts have confirmed this observation. Perhaps even that incriminating evidence remains unproven.

Weiner carried out additional extensive historical (as opposed to scientific) research in an attempt to confirm his suspicion that fraud had been committed. But would any of his accusations against Charles Dawson stand up in a court of law? Even Weiner admitted that everyone who was still living in 1953 who had known Dawson attested to his integrity.

Weiner's accusation that Pitldown was a fraud was another story that no newspaper editor could reject. Yet his data no more justified his conclusion than did Dawson and Smith Woodward's. And again, editors of the scientific journals seemed more preoccupied with increasing the circulation of their journals than with critical evaluation.

Books and articles speculating on the conspiracy theory and claiming one or another new co-conspirator have thrived since Weiner's announcement. But many of these, including that by Stephen J. Gould, focus on the personalities of the people involved without scrutinizing the scientific information. To Weiner's

credit, he soon dropped the subject of Pitldown and went on to establish himself in physiology.

What can we learn from Pitldown that is applicable to the current situation? I believe there are a number of lessons for both scientists and non-scientists alike.

First and foremost is that scientific data cannot be judged from afar. Painful and time consuming as they may be to accumulate and analyze, details are the substance of science. Great theories are no more valid than the minutiae on which they are based. It is therefore difficult to believe that scientists who conduct their research through hordes of students and postdoctoral fellows can be doing their job adequately. This in turn may explain why so many retractions and recent allegations of fraud (and theft) are associated with large laboratories.

Corollary to this, the increasing tendency to publish scientific articles on the basis of their sex appeal is stupid and dangerous. And journal editors hawking their wares in an effort to increase circulation are as guilty of promoting fraud as anyone. Inadequate review is nothing new to science but it invites those who would cheat. Furthermore, the reviewing process must not be influenced by irrelevancies like national pride, the spectacular nature of the conclusions, or the reputation of the authors.

Of course, scientists are driven by the same passions for recognition and advancement as are lawyers and politicians. But unlike those fields, science possesses an objective standard and a unique methodology. And despite what might be called scientific deconstructionism, there are truths that can be established beyond reasonable doubt.

While it may be amusing to ponder "facts" that can be neither confirmed nor denied, speculations must not be confused with conclusions. It is essential for scientists to convey to non-scientists that the response "It is not known" is neither a

cop-out nor an invitation for parascientists to step in, but a firm assertion of the current state of knowledge.

Finally, while there is no intent to draw parallels between Dawson and Weiner on the one hand and Baltimore and O'Toole on the other, it should not be forgotten that the National Institutes of Health report condemning Dr. Theresa Imanishi-Kari was prepared without hearing her defense. And while many of my scientific colleagues may denigrate the legal profession, everyone in this case might do well to remember that the concept of due process has a venerable history.

Dr. Martin is chief of the microbial genetics section in the Laboratory of Molecular Biology, NIDDK.



Dr. Saul Rosen (l), acting Clinical Center director, and Dr. Harvey Klein, chief of the Department of Transfusion Medicine, dedicated the new state-of-the-art facilities on Apr. 8 by planting a red maple tree. Preceding the tree-planting ceremony, former blood bank directors talked about the bank's development over the years during a program in Lipsett Amphitheater.

Symposium (continued from p. 1)

principal guidelines. We want to honor individuals whose early postdoctoral experience had been in the Intramural Division of the NHLBI, and whose accomplishments had been significant after leaving this institute. Not only is this appropriate for an alumni celebration, but it also fits well with the NIH Research Festival '91. NIH Research Festival is principally an activity of, by and for the present NIH postdoctoral community. What better way to begin than with a symposium honoring some of their predecessors. Also, we decided that the symposium should be broadly based scientifically so as to engage the interest of the maximum number of scientists at NIH.



Dr. Joseph L. Goldstein is the recipient of the NIH 1991 Distinguished Alumni Award.

We had no trouble identifying former NHLBI postdoctoral fellows whose achievements as alumni merited recognition and whose current research would contribute to an outstanding symposium of broad interest to the present intramural community. The problem was in narrowing the choice. In honoring Joseph Goldstein as the alumnus of the year, and with William Catterall, Alfred Gilman, Ronald Kaback, Philip Leder and Philip

Majerus as the major speakers, we are confident that we have met our goals.

We hope that many alumni will return to the Bethesda campus, attend the NHLBI symposium, join us in the reception on Sunday evening, Sept. 22, in honor of the speakers, and if possible, stay to participate in all the activities that follow.

Festival Schedule Announced

NIH Research Festival '91 will be held in conjunction with the National Heart, Lung, and Blood Institute's Alumni Day activities on Monday, Sept. 23 and Tuesday, Sept. 24.

The Research Festival will officially begin in the Clinical Center's Masur Auditorium at 3:15 p.m. on Sept. 23 with opening remarks by NIH director Dr. Bernadine Healy. Her address will be followed immediately by the opening symposium entitled "New Molecular Approaches to Disease Prevention and Therapy." Three simultaneous symposia will be presented the next afternoon, Sept. 24, beginning at 3:30 p.m.: "Cellular Proliferation," "Molecular Developmental Biology," and "Molecular Pathogenesis of Infectious Disease."

More than 500 posters highlighting current NIH research will be presented early in the afternoon of Sept. 23, the evening of the 23rd and again during the afternoon of Sept. 24. In previous years, only two poster sessions have been scheduled; however, due to the high number and quality of poster submissions this year, a third poster session has been added. Posters will be displayed in the Research Festival tents that will be set up in parking lot 10-D southwest of the Clinical Center.

Thirty-three interactive workshops featuring NIH scientists will be held from 8:30-11:00 a.m. and again from 1:00-

(See Festival p. 6)

Festival (continued from p. 5)

3:30 p.m. on Sept. 24. These will be located throughout the NIH campus.

The evening of Tuesday, Sept. 24 will be set aside for a picnic. Free tickets may be picked up on campus. The final program and scheduling information with details will be available in late August.

The Research Festival tents will be used on Thursday and Friday, Sept. 26 and 27, for an exhibit of scientific research equipment from more than 300 companies serving the NIH community, sponsored by the Technical Sales Association.

The Research Festival was started 6 years ago by Dr. Abner Notkins, director of intramural research, NIDR. Efforts by Dr. Notkins and subsequent chairpersons, Dr. J. Edward Rall, former NIH deputy director for intramural research, and the NIH Special Projects Office have made the NIH Research Festival a great suc-



Dr. Steven Paul of NIMH is the chairman of the organizing committee for NIH Research Festival '91.

cess. Dr. Steven Paul, director of NIMH's Intramural Research Program and this year's chair calls it "a welcome and much anticipated yearly event." He went on to say, "As in past years, we continue to strive to include both our most seasoned and renowned scientists as

Schedule of Events – Research Festival '91

Monday, Sept. 23, 1991

- | | |
|-----------------|---|
| 8:30 a.m.-12:00 | NIH Distinguished Alumni Symposium in honor of Dr. Joseph L. Goldstein, sponsored by NIH and NHLBI
Opening Remarks and Award Presentation (Dr. Claude Lenfant)
Masur Auditorium |
| 12:00-2:00 p.m. | Poster Session I (Festival tents in parking lot 10-D, southwest of Bldg. 10). |
| 3:15-3:30 p.m. | Opening Remarks (Dr. Bernadine Healy) |
| 3:30-5:30 p.m. | Symposia I: New Molecular Approaches to Disease Prevention and Therapy
Masur Auditorium |
| 5:30-7:30 p.m. | Poster Session II
Festival Tents |

Tuesday, Sept. 24, 1991

- | | |
|----------------------|--|
| 8:30-11:00 a.m. | Workshops 1-16 |
| 11:00 a.m.-1:00 p.m. | Poster Session III
Festival Tents |
| 1:00-3:30 p.m. | Workshops 17-33 |
| 3:30-5:30 p.m. | Symposia II, III and IV:
Cellular Proliferation
Masur Auditorium
Molecular Developmental Biology
Lipsett Amphitheater
Molecular Pathogenesis of Infectious Disease
Wilson Hall |
| 5:30-8:00 p.m. | Picnic and music near Festival Tents |

Programs with complete listing of symposia, posters and workshop titles and locations will be available at the Visitor Information Center in Bldg. 10 and in 31A. Lunches will be sold near the Research Festival tents. Shuttle bus service will be available on a frequent and regular basis throughout the NIH reservation during the festival. Parking spaces in the 4I-B lot will be available, but limited in number. Registration is not required for any of the events except the picnic dinner. Free tickets may be picked up on campus. For more information call the NIH Visitor Information Center at (301) 496-1776.

well as junior postdoctoral fellows.

"The 1991 NIH Research Festival program, is, in my opinion, one of the strongest scientifically and will combine

the best of intramural NIH research with a stellar group of scientific alumni participating in the NIH Alumni Day activities," said Paul.

News From and About NIHAA Members

Dr. Ernest M. Allen, who served at NIH from 1946 to 1963 and as associate director of NLM from 1973 to 1981, retired after approximately 40 years in grant programs of DHEW, including the time at NIH. He writes: "My tenure at NIH afforded me great pleasure and satisfaction both in the progress made in the grant and fellowship programs and in my association with the marvelous staff." Since retirement he has kept busy visiting family and friends. He lives in Augusta, Ga.

Dr. Bernard W. Agranoff, who was a biochemist at NINDS, 1954-1960, and a Fogarty Scholar in 1989, is currently director of the Mental Health Research Institute at the University of Michigan. He was recently elected to the Institute of Medicine of the National Academy of Sciences.

Dr. Nathaniel I. Berlin, former director of the Division of Cancer Biology and Diagnosis, NCI, 1956-1975, writes: "After serving 12½ years as the Tenton professor of medicine and director of the Cancer Center of Northwestern University, I became professor emeritus and moved to Miami to become professor of oncology, and deputy director, Sylvester Comprehensive Cancer Center, University of Miami and briefly served as the director and vice-chairman, department of oncology."

Dr. Edward N. Brandt, Jr., former assistant secretary for health, DHHS, and then president of the University of Maryland at Baltimore, is now executive dean of the University of Oklahoma College of Medicine, Oklahoma City, OK. Recently he has been appointed by the board of regents to the Lawrence N. Upjohn chair in medicine. The chair has been established

in memory of the college's founding dean, Dr. Lawrence N. Upjohn. His father and uncle founded the Upjohn Co. and he succeeded his uncle as president of the company in 1930 and became chairman of the board in 1943. The chair has been endowed with \$500,000 from the Upjohn Foundation. Another \$500,000 will be provided by the Oklahoma State Regents matching fund program.

Dr. Peter G. Condliffe, retired chief of the Fogarty-Scholars-in-Residence Branch, and now a scientist emeritus in the Laboratory of Cellular and Developmental Biology, NIDDK, last year spent 6 weeks in Japan exploring postdoctoral



During his visit to Japan last winter Dr. Peter Condliffe (l) met with Professor Setsuro Ebashi, president, National Research Center, Okazaki, Japan, and former Fogarty scholar-in-residence.

research opportunities for young Americans working in the biomedical sciences. Of the 80 or more scientists he interviewed, a substantial number turned out to be NIH alumni. He is currently preparing a report about his visit to Japan for the Japanese NIH Centennial Alumni Association.



Dr. Donald S. Fredrickson, former NIH director, recently lectured on NIH history—the topic of a book he is preparing—at NLM's Billings Auditorium. Combining scholarship and humor ("NIH's central files in the basement of Bldg. 1 are a fantastic treasure...where NIH's chief cooks have buried their unsuccessful souffles"), his talk focused on the origins of the Clinical Center, the central personalities involved in NIH's growth at mid-century, and NIH's pivotal role in American science.

Dr. Ronald B. Herberman, formerly with the Biological Therapeutics Branch of NCI from 1966 to 1985, is now director of the Pittsburgh Cancer Institute, which was recently awarded a \$500,000 unrestricted cancer grant by the Bristol-Myers Squibb Co. In addition, Pennsylvania Gov. Robert P. Casey presented him with the 1991 Governor's Award for Excellence in Science for his work in cancer research and treatment.

Dr. Irving Kushner, NMI, 1955-57, writes that he is currently professor of medicine and pathology at Case Western Reserve University and medical director of the MetroHealth Center for Rehabilita-

(See *Members* p. 8)

Members (continued from p. 7)

tion in Cleveland, Ohio. He is "actively involved in studies of the molecular biology and cell biology of the acute phase response."

Dr. Walter M. Lovenberg, who was at NIH from 1958 to 1985, and served as head of the section on biochemical pharmacology, Hypertension-Endocrine Branch, NHLBI, is currently president of



the Marion Merrell Dow Research Institute, executive vice president of Marion Merrell Dow and a member of the company's board of directors. He joined the Merrell Dow Research Institute in 1985. He was named to his current position in 1989.

Dr. John D. Minna, former chief, NCI-Navy Medical Oncology Branch, Division of Cancer Treatment, NCI, has been named director of the new Harold C. Simmons Cancer Center at the University of Texas Southwestern Medical Center, Dallas. He was also named holder of the Lisa K. Simmons distinguished chair in comprehensive oncology.

Dr. Laurent F. Miribel, a visiting fellow in the Laboratory of Genetics, NCI, from 1986 to 1988, writes that: "Since I left NIH in July 1988, I have

been working at Sandoz Pharma Ltd. in research and development as laboratory chief (biotechnology) and today as central monitor (Intl. clinical research, osteoporosis). I will leave the company in September 1991 as I have decided to go for a MBA. My interests lie in the international marketing and project management areas."

Dr. Donald L. Morton, who was chief of the tumor immunology section in the Surgery Branch, NCI, from 1960 to 1970, has left his position as director of the Jonsson Comprehensive Cancer Center's surgical oncology division at UCLA to become president and medical director of the new John Wayne Cancer Institute at St. John's Hospital and Health Center, Santa Monica.

Dr. James A. Pittman, Jr., at NCI from 1954 to 1956, and for 18 years dean of the University of Alabama School of Medicine in Birmingham, received the 1990 Abraham Flexner Award for Distinguished Service to Medical Education. Pittman, a lifelong scholar, was honored for his dedication to the entire medical community. He is credited with the unprecedented growth in quality and size of the medical education complex at the University of Alabama School of Medicine over the past two decades. His experience as a leading thyroid specialist, his service in the Endocrine Society, and his presidency of the American Federation for Clinical Research add to his many contributions to medical education.



Dr. Arnold "Scotty" Pratt (I), former DCRT director, is helped by his successor Dr. David Rodbard to unveil his portrait (by NIH artist Al Laoang) in a recent ceremony. DCRT staffers also honored Pratt's 25 years of division leadership by naming a conference room after him and hailing his recent appointment as "scientist emeritus."

Dr. Jay Shapiro, deputy and acting director of the Clinical Center, 1978-83, has recently been appointed program director for the General Clinical Research Center, Division of Geriatric Medicine and Gerontology at the Johns Hopkins University School of Medicine. He is also a recipient of NIH research funding for studies in the area of inherited and acquired disorders of skeletal function. He joins the Johns Hopkins faculty from his prior position as chairman of the department of medicine at St. Vincent Hospital in Worcester and professor of medicine at the University of Massachusetts Medical School.

Dr. Carlo H. Tamburro, a fellow in hepatic diseases, NIDDK, 1965-68, and now director, Liver Research Center, and professor of medicine and community health at the University of Louisville School of Medicine, made a presentation at the symposium, "The Role of the Laboratory in Environmental Health," on July 24, 1990. His presentation discussed the limitations of traditional clinical chemistry tests in assessing the effects of exposure to toxic substances. His talk also covered the growing use of molecular biology methods in toxicity monitoring.

Dr. William Tester, a clinical associate at NCI, 1980-82, writes that he was "recently named associate director, Albert Einstein Cancer Center, Phila., Pa. From 1983-1991, I have been in private practice at Einstein and served as principal investigator of clinical cooperative group protocols. Major interests include combined modality treatment of bladder cancer, treatment of lung cancer, and chemoprevention studies. I am enjoying working under Dr. Martin Cohen. When I came to the NCI in 1980, Dr. Cohen was my first attending on the clinical service."

Dr. Samuel O. Thier, clinical associate, NIAMD, 1962-64, president of the



Institute of Medicine of the National Academy of Sciences, has been selected as the sixth president of Brandeis University. He is expected to assume his new post by Oct. 1.

Dr. P. Roy Vagelos, senior surgeon and then head of the section of comparative biochemistry, Laboratory of Biochemistry, NHLBI, 1956-66, recently received the 1991 Maxwell Finland Award in Infectious Diseases at a dinner sponsored by the National Foundation for Infectious Diseases. He is currently chairman and chief executive officer of Merck & Co., Inc. He was selected as this year's recipient "for his leadership in biomedical research leading to drugs and other therapeutic agents of direct benefit to mankind, his important influence on national science policy, and for his distinguished contributions to the advancement of knowledge as a teacher and head of one of the nation's outstanding research laboratories."

The State of the Alumni Association - Two Notes From the Past and Present NIHAA Presidents

Dr. Gordon D. Wallace

My term of office as the first president of NIHAA has come to a close, and I appreciate this opportunity to present my evaluation of the organization's state, and its expectations for the future.

We presently have more than 1,400 members, a newly formed chapter in Birmingham, Alabama, and 12 foreign chapters. We have had several successful social/educational events, including receptions at the Japanese and Italian embassies. Dr. James Wyngaarden, former NIH director, attended the first, and Dr. Bernadine Healy, the new NIH director, attended the second. Last September, there was an Alumni Day symposium honoring Drs. Emil Frei and Emil Freireich during the NIH Research Festival. Our newsletter, the *NIHAA Update*, has been published six times. The NIHAA organizing committee, headed by Dr. Abner Notkins, provided leadership for our early accomplishments.

The board of directors and the executive committee of NIHAA have discussed extensively the objectives and policies of the organization. The consensus is that we continue our current course of activities in support of biomedical research, and expand our efforts as resources allow. For example, we hope to provide more assistance to the NIH Office of Education in recruiting Clinical Research Fellows and Associates, and be of service to those who join NIH. We are initiating a speaker's bureau to provide information to the public on biomedical matters such as the use of animals in research. The NIHAA is an advocate of a strong Intramural Research Program and shall assist it directly when appropriate.

(See *Presidents* p. 10)

Presidents (continued from p. 9)

NIHAA is fortunate to have two highly competent and dedicated part-time employees—Harriet Greenwald, who doubles both as editor of *Update* and executive director, and Mary Calley Hartman, our administrative assistant. Currently, we are attempting to recruit another executive officer who will focus on fundraising and membership expansion and allow Greenwald to concentrate on *Update* editorship. NIHAA volunteers have contributed to our progress, especially Dr. James Duff, chairman of the Washington chapter. Dr. John Sherman, NIHAA vice president, has chaired a committee to evaluate our original constitution and bylaws and to confer with legal advisors. A revision of the bylaws was recommended and passed by the board of directors on June 18. Through the efforts of Sherman and Tom Kennedy, several pharmaceutical companies have agreed to donate funds to support the publication of *Update*.

I have greatly appreciated the opportunity to serve as the first president of the NIH Alumni Association and look forward to continued service on the board and executive committee. The NIHAA has evolved into a unique organization that will continue to fulfill the needs of alumni, but also will provide significant support to one of the world's foremost biomedical research institutions.

Dr. Joe R. Held

The National Institutes of Health Alumni Association has had a good start. The credit for this goes to the exceptional organization skills of Dr. Abner Notkins and his NIHAA organizing committee, the valuable leadership provided by Dr. Gordon Wallace as the association's first president, the effective staff work of Harriet Greenwald and Mary Calley Hartman, and the dedication and hard work of all those who serve on the board of directors and on various committees.

Our membership has grown steadily.

We have sent out renewal notices; if you have not returned yours, please do so because dues are an important source of our income. The NIHAA newsletter editorial advisory committee, chaired by Richard McManus, has guided the organization in producing an outstanding newsletter, the *NIHAA Update*. We have instituted an annual Alumni Day in conjunction with NIH Research Festival. The membership has enjoyed a number of excellent and informative meetings and pleasant social events.

NIHAA has reached a milestone. We are leaving the initial organizing stages and must continue to build on the base that has been established. There is a great potential for membership, both in terms of individual members and chapters. We must find ways to reach more people and to make it attractive to join NIHAA. In this regard we must keep in mind the diverse reasons for which people join. This will require defining various ways in which we can contribute to NIH and the important activities that it supports throughout the world. We will have to learn from the members, and others whom we hope to serve, how they believe we can be most effective. Using the information gained through this process will be essential to developing a strategic plan that can guide us toward specific goals.

Besides the satisfaction of greater personal interaction with old friends and former colleagues, which attracted many of us to join, the NIHAA also affords us a variety of opportunities to continue contributing to NIH and the biomedical research community in general. For example, the NIHAA is a link in strengthening communications between the NIH intramural programs and the extramural community through its alumni who are now working in universities and other extramural research institutions. This could be beneficial in many ways such as facilitating recruitment and providing more opportunities for young scientists. Another

example might be in relation to information activities. Many alumni could help to explain sensitive scientific issues to the lay public, and communicate knowledge on research accomplishments. They also could highlight the need for continuing resource support to assure continued success in solving disease problems.

NIH is one of the most remarkable and beneficial institutions ever created, and it is a privilege to have an opportunity to continue to be actively involved with it. Seeing what has already been done by a group of devoted NIHAA organizers makes me enthusiastic. I look forward to being a part of the NIHAA team with Dr. John Sherman continuing as vice-president and Cal Baldwin as secretary-treasurer. The collaboration of all the members will be needed to attain our goals. Your suggestions regarding what we are doing, and what you believe we should do, will be especially valuable and welcome.

NIHAA Board of Directors Approves Changes in Bylaws

In order to avoid any appearance of conflicts of interest, the NIHAA Board of Directors agreed unanimously to limit voting privileges and the holding of office in the association to alumni members. Associate members (current employees of NIH) will receive all information, and otherwise participate in the affairs of the association. Associate members may not participate in fund raising. The board will establish an NIH Employee Council that will serve as a source of information and advice to the board. Persons wishing a copy of the revised bylaws should call or write NIHAA Office, 9101 Old Georgetown Rd., Bethesda, MD (301) 530-0567.

Swearing-In (continued from p. 1)

Healy the first person covered under the new pay reform legislation, which gave the NIH directorship an immediate pay raise.

"Dr. Healy, you bring the inspiration, soul and understanding necessary for building on NIH's already sterling legacy," said Bush, emphasizing the importance of individual effort to the goal of making this country "not only the wealthiest, but the healthiest nation in the world.

"Lives of dedication are exemplified here at NIH in healthcare workers, animal caretakers, grants administrators and support staff," he continued. "There are buildings full of unsung heroes right here."

The ceremony, held before a capacity crowd in Masur Auditorium, in addition to President and Mrs. Bush, Sullivan, DHHS assistant secretary for health Dr. James Mason, and Undersecretary Constance Horner, was attended by Healy's husband, Dr. Floyd Loop, her daughters Bartlett and Marie, and her mother.

"This is the proudest moment of my professional life, made all the more special by the presence of my husband and love of my life, my children and my mom," said Healy, who smiled and intermittently clasped her husband's hand during the ceremony. "I can think of no greater honor than to be named the first woman director of the National Institutes of Health."

Healy said that even as special as the moment was to her, she was not thinking only of herself and her own family during the swearing-in ceremony. She was remembering another woman, a 30-year-old mother of four who had been diagnosed with metastatic breast cancer.

During a recent Capitol Hill visit, Healy had met the woman shortly before the woman was to undergo a last-ditch, difficult treatment to stop the spread of her disease. As Healy was leaving, the

woman, who Healy described as displaying an inner beauty even in the face of the devastating effects of her cancer, took her arm and said, "Dr. Healy, hurry."

"Today, I take that young woman's farewell to me as a direct mandate from the American people," Healy declared. "NIH and the medical community must hurry. Human life is at stake, cures are desperately needed, and those cures are achievable—if we have resolve."

Bush, who praised all NIH'ers for their spirit of commitment, said Healy embodies what author Lewis Thomas meant when he spoke of "the capacity to do something unique, imaginative, useful and altogether right." The president also mentioned that he has asked Congress to increase NIH's 1992 budget to nearly \$9 billion.

"NIH-supported research has produced some of the most important medical advances in this century," he said. "In becoming director, Dr. Healy joins a long and noble tradition."

Bush also recalled his first introduction to Healy's work in 1984 when she worked for 2 years in the White House as deputy director of the Office of Science and Technology Policy. The office's director, Dr. Allan Bromley, Bush's chief science advisor, also attended the swearing-in.

Aside from being the first woman NIH director, Healy has made history in other ways: As Sullivan mentioned, the NIH directorship was the first position the president suggested for the "critical position" category, a recently approved federal pay reform measure that authorizes 800 government positions to be paid at salary levels approaching the Cabinet secretary level—about \$138,000. Healy is the first to hold the position under this new pay agreement, on par with an executive level I.

In addition, the first Black director of an NIH institute—Dr. Kenneth Olden of NIEHS—was the first appointment of Healy's young tenure.



President Bush and Dr. Healy, who worked in the White House science policy office 1984-85 when Bush served as vice-president, share private words during her formal swearing-in ceremony June 24, 1991.

"Dr. Healy is already making an impact," said Sullivan. "I am confident NIH will flourish under her dynamic and conscientious leadership."

A cardiologist by training, she has also introduced a historic new 10-year, \$500 million women's health initiative, the most definitive study of its kind ever undertaken in the United States. The three-pronged, comprehensive initiative will include a large prospective surveillance program, a nationally based community prevention and intervention study and randomized clinical trials investigating cancer, cardiovascular disease and osteoporosis.

"NIH is a national treasure," said Healy. Referring to the constitutional oath administered to her, Healy compared the 13 institutes to the 13 original states that signed the U.S. Constitution. "But we can, we must, continue to be better," she said. "For us there are many wars yet to be won, and each day is our own Operation Bethesda Storm."

"We can only be a strong nation if we are a healthy nation," she said, concluding her address. "To this end we solemnly pledge to improve the health of this nation through science and discovery. And to that young mother and her family, and to every man, woman and child who has ever been touched by the anguish of disease—we fervently pledge to each of you—We *will* hurry."

Science Research Updates

RECOMBINANT GAMMA INTERFERON EFFECTIVE IN CHRONIC GRANULOMATOUS DISEASE

A team of NIAID scientists and others have had dramatic success using recombinant gamma interferon to treat the inherited immune disorder chronic granulomatous disease (CGD). A genetic defect leaves people with CGD vulnerable to certain life-threatening infections. The drug reduced the frequency of serious infections by about 70 percent in patients with CGD, making the interferon twice as effective as antibiotics, the current mainstay of CGD treatment.

The International Chronic Granulomatous Disease Cooperative Study Group, composed of researchers at 13 medical centers worldwide, conducted the study under the sponsorship of Genentech, Inc., of South San Francisco, the biotechnology company that manufactures the drug. Dr. John I. Gallin, director of NIAID's Division of Intramural Research, was one of seven principal investigators in the study.

CGD represents a group of closely related diseases caused by a defect in any one of four genes. As a result, phagocytes, the scavenger cells of the immune system, fail to produce the oxygen-rich chemicals needed to kill most fungi and bacteria. Symptoms of the disease include tumor-like masses called granulomas. Before 1970, children born with CGD often didn't live past their 10th birthday. Treatment with antibiotics, introduced in the 1980's, has helped reduce the average interval between life-threatening bacterial infections, but a serious infection can still necessitate a long hospital stay and intravenous antibiotics.

The study involved 128 patients whose average age was 15 years old. Half as many patients receiving gamma interferon developed serious infections as did those on placebo. In addition, patients who received the interferon required three times fewer days of hospitalization for the treatment of serious infections than did patients receiving placebo. The most dramatic treatment effects were seen among the 52 patients less than 10 years of age: 81 percent of those receiving interferon were free of serious infec-



CGD patient James Mann, at age 4, plays with his mother at the Clinical Center playground.

tion after a year as compared with 20 percent of those receiving placebo. The therapy was well tolerated and caused no serious side effects.

Patients treated with gamma interferon are expected to lead a nearly normal life, with significantly fewer and shorter hospitalizations required to manage their disease. In addition, gamma interferon may prove useful in other conditions in which immune function is impaired.

NEW MOLECULAR PLAYER IN LIGHT RESPONSE IDENTIFIED

Collaborating scientists in Seattle, Stanford, and Moscow have identified a new member of the molecular team that ushers the ebb and flow of calcium ions in the process that enables eye cells to respond to light.

In work supported by NEI and NIGMS, grantees have identified a protein they call recoverin, so named because it helps a cell that has been exposed to light recover and be ready to respond to light again.

When a photoreceptor cell in the "dark state" is exposed to light, calcium ion channels in the cell membrane that are open in the dark state close. This reduces calcium levels by stopping the entry, but not the exit, of calcium ions from the cell. To reopen the channels and restore calcium levels, the enzyme guanylate cyclase needs to resynthesize cyclic guanosine monophosphate (cyclic GMP), which keeps the calcium channels open.

The drop in calcium concentration after light exposure frees recoverin from its dark state condition of being bound to calcium. When recoverin is no longer bound to calcium it sets guanylate cyclase in motion and dark state calcium concentration is restored.

Recoverin may have other roles in maintaining the structure and function of photoreceptors, and other investigators have found antibodies to recoverin in persons with cancer-associated retinal degeneration. The discovery of its role in reopening calcium channels adds an important piece to the puzzle depicting the process of photoreceptor response to light.

Grantees Dr. Lubert Stryer at Stanford University School of Medicine, Dr. Kenneth Walsh at the University of Washington School of Medicine, and Dr. James

Hurley at the Howard Hughes Medical Institute, University of Washington School of Medicine, and their colleagues at these institutions and the Moscow State University, reported these findings.

GENE FOR HUMAN PROTEIN TRANSFERRED TO RAT LUNG

The transfer of the gene for a human protein to the lungs of rats suggests a new means of genetically correcting inherited human lung diseases.

A team in NHLBI scientist Dr. Ronald Crystal's laboratory, collaborating with researchers in France, used a disabled adenovirus into which the human gene for the protein alpha1-antitrypsin was inserted to transfer the gene to rat lung cells. Alpha1-antitrypsin normally protects the lung from the protein-digesting enzyme elastase. One reason for interest in alpha1-antitrypsin is that a genetically caused deficiency in the protein results in hereditary emphysema, a chronic lethal lung disease.

Adenoviruses have two assets that make them attractive as vectors for gene transfer into lung tissue. First, most adenoviruses infect the upper respiratory tract (they are one of the viral types that can cause the common cold). Second, unlike retroviruses, the type of vector that has been used in most gene transfer efforts, adenoviruses do not need rapidly dividing cells to work. Retroviruses are not as suitable for working with the lung, because epithelial lung cells divide infrequently if at all.

In *in vitro* tests and in cotton rats, the engineered adenovirus infected lung epithelial cells, which synthesized human alpha1-antitrypsin for at least a week. Future research is needed to determine the safety aspects of using adenoviruses, such as whether they could under any circumstances cause cancer. The scientists also need to identify the best way to administer the virus to ensure its dispersal in the lung and provide a lasting therapeutic effect.

This research has particular promise for two of the most common lethal inherited diseases affecting humans: hereditary emphysema caused by alpha1-antitrypsin deficiency and cystic fibrosis. In both diseases, an inherited defect results in chronic degenerative lung disease. Protein augmentation can be helpful in alpha1-antitrypsin deficiency, but existing treatment for CF is palliative. Correction of the defective genes in the target lung tissue would provide, for CF patients in particular, the first hope that the progressive lung deterioration caused by the disease could be halted.

LIVER CANCER MUTATION MAY PINPOINT ONE MECHANISM OF TOXIN-INDUCED CANCER

Research in geographic areas where liver cancer is common suggests that cancer-causing toxins leave characteristic molecular fingerprints that may help scientists better understand how and by what cancers are set in motion.

Two teams of NCI and NCI-supported researchers studied liver cancer in China and South Africa. Infection with hepatitis B virus and exposure to aflatoxins—produced by fungi that grow on some poorly stored foods such as peanuts—are risk factors for liver cancer in these areas. The researchers examined a putative tumor-suppressor gene designated p53 in which mutations are known to be associated with breast, lung, colon, and bladder tumors. In liver cancer tissue from patients, scientists found that many of the mutations occurring in the p53 gene occurred in or near the same three-base codon of the gene. Moreover, base substitutions at this location were consistent with chemical effects of aflatoxins that have been observed in laboratory tests in previous research.

These results are the first to identify a single mutation-vulnerable hotspot in p53 (in other cancers, mutations have been found scattered throughout the gene).

The results suggest that it may be possible to trace the specific mutagenic effects of carcinogens on genes such as p53. Such information could facilitate testing compounds for carcinogenicity and ultimately lead to ways to interrupt the process.

The two teams reporting these findings were Dr. Curtis Harris and colleagues at NCI and the University of Maryland School of Medicine, collaborating with scientists in China, and NCI-supported scientists Dr. Mehmet Ozturk and colleagues at Massachusetts General Hospital who worked with scientists in South Africa.

GENE SWAPPING TECHNIQUES APPLIED TO PARASITE STUDIES

The targeted insertion of new genetic material into the chromosomes of the parasite that causes sleeping sickness is an example of the diversity of potential applications for new, powerful techniques for swapping or correcting genes.

NIAID-supported scientists Drs. Amy Gwo-Shu Lee and Lex H.T. Van der Ploeg at Columbia University, New York, used homologous recombination to introduce a foreign gene into the protozoan *Trypanosoma brucei*. Homologous recombination uses a naturally occurring process in which strands of genetic material with matching sequences will sometimes exchange adjacent segments. Scientists can tailor the genetic material they want to insert into an organism's genome to increase the likelihood that homologous recombination will occur between the DNA vector, synthesized in the laboratory, and DNA at desired locations in the chromosomes of the organism. Techniques also exist to test whether and where recombination has occurred in order to select only the organisms in which the desired insertion has taken place. The ability to target gene transfers makes it possible for the gene to be inserted in a location where it will be expressed appropriately.

(See *Updates p. 14*)

Updates (continued from p. 13)

In the current study, a gene for resistance to an antibiotic was stably incorporated into a selected location in the parasite's chromosomes. The ability to manipulate genes in these organisms provides a means of studying their biology, and perhaps creating a harmless organism for use in vaccines. Parasitic protozoa cause an array of illnesses—among them, malaria and amoebic dysentery—that are serious health problems worldwide.

NINDS TRIAL SHOWS THAT SURGERY PREVENTS STROKE

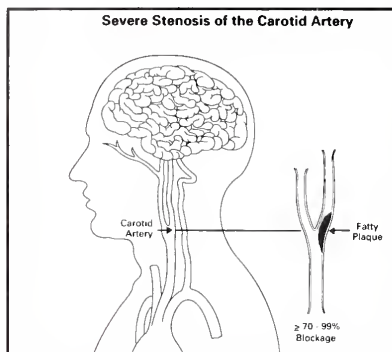
Surgery to remove fatty deposits from the neck's carotid arteries, which supply blood to the brain, prevents stroke in patients with severe, symptomatic carotid blockage, according to early results from a trial funded by NINDS.

The surgery, carotid endarterectomy, is frequently performed, but controversy over its effectiveness and improvements in nonsurgical treatments have triggered a sharp decline in its use in recent years.

According to NINDS scientists, these trial results show that surgery in selected patients, when added to appropriate medical care, cuts stroke risk by two-thirds from that of medical care alone.

As part of the 5-year trial, investigators at 50 centers in the United States and Canada studied 595 patients under 80 years of age with at least 70 percent narrowing of a carotid artery. All enrolled patients were symptomatic, having had either a non-disabling stroke or at least one transient ischemic attack in the preceding 120 days. In a transient ischemic attack, or TIA, stroke-like symptoms resolve within 24 hours.

Investigators provided all patients with the best available medical care, including aspirin or other blood-thinning drugs, dietary counseling and, when indicated, smoking cessation advice and



Fatty deposits can narrow the neck's carotid arteries and trigger formation of blood clots. When these clots choke off the brain's blood supply or break off to block smaller arteries, a stroke results. In carotid endarterectomy, surgeons remove fatty plaque to restore the artery's original contour.

treatment for high blood pressure, high cholesterol and diabetes. Three hundred randomly chosen patients also underwent surgery on the narrowed carotid artery by qualified neurosurgeons or vascular surgeons who had previously demonstrated the ability to perform the surgery with a very low incidence of complications.

After 18 months, 24 percent of medical patients, but only 7 percent of surgical patients, had suffered a stroke on the affected side. Because of the trial findings, NINDS halted the medical treatment arm for severe carotid blockage in February and issued a clinical alert detailing trial results to the medical community.

The investigators will continue to observe the 595 patients with severe carotid narrowing for the full 5 years of the study, and a second portion of the trial will continue to examine the effectiveness of carotid endarterectomy in symptomatic patients with moderate (30 to 69 percent) carotid narrowing. A second NINDS-sponsored trial is underway to test the efficacy of carotid endarterectomy in patients with carotid narrowing who are asymptomatic.

GENE BLOCKS CANCER SPREAD IN MICE, MAY WORK IN HUMANS

By inserting a suspected cancer suppressor gene into mouse skin cancer cells, scientists have demonstrated that the gene designated *nm23* can block the formation and spread of certain skin cancers in mice.

Based on evidence from earlier studies that the *nm23* gene could suppress metastasis, Dr. Patricia Steeg and co-workers at NCI, collaborating with scientists at Molecular Oncology, Inc. and Program Resources, Inc., used genetic engineering techniques to insert the *nm23* gene into highly metastatic mouse melanoma cells, which normally express this gene at very low levels. Some of the cells integrated *nm23* into their genetic material and formed clones, or colonies of descendants, that continued to express *nm23* at high levels.

When injected into mice, the clones with added *nm23* produced fewer tumors than clones without the added gene. In addition, the *nm23*-engineered clones produced 90 percent fewer metastases in the mice. The researchers did not see any significant effect of the added *nm23* gene on tumor growth.

Ultimately, gene therapy could be used to treat patients by inserting *nm23* into cancer cells. In the meantime, it should be possible, according to the researchers, to select for drugs that increase expression of *nm23*, or mimic its effect, in cancer cells. This could lead to development of a new class of anti-cancer agents. The researchers plan, along with other experiments, to insert human *nm23* into human breast cancer and ovarian cancer cells to see whether the gene inhibits spread of these cancers in laboratory systems.

This material was compiled by Charlotte Armstrong, Office of Communications, OD.

Meets the Press**Healy Outlines Framework Of Her Directorship***By Rich McManus*

At a recent press briefing, NIH director Dr. Bernadine Healy outlined four initiatives that will distinguish her directorship—nurturing the talent base of science, long-term planning, good financial management and technology transfer—then answered two of the biggest criticisms the public has leveled at NIH recently with solid programs—a women's health initiative and buttressing for a declining research award rate.

Healy took immediate control of two new powers—a discretionary fund and budget transfer authority—to craft what she calls the "James A. Shannon Director's Award." Some 300-500 of these grants, limited to \$50,000 per year, would fund research proposals that just missed the cutoff for funding through regular channels.

"The Shannon awards are expected to provide a stabilization, so that you won't have a scientist suddenly going from a grant that may be funded at the rate of \$250,000 a year to nothing at all," she said. "That \$40,000 or \$50,000 can go a long way toward sustaining (scientists') effort."

Healy cautioned that the grants won't reverse a declining award rate—they won't even be counted in the research project grant success rate—but they will "help tide someone over" and may keep promising investigators from leaving science altogether.

Investigators won't apply for the Shannon grants, which are scheduled to begin in September. Rather, new and competing renewal R01 and R29 grant applications with priority scores just above the cut-off would serve as the basis for nominations by ICD staff.

**Dr. Bernadine Healy**

The women's health initiative (see p. 16), on the other hand, would be a massive undertaking that Healy imagines could one day rival the Framingham heart study in scope—maybe lasting 50-60 years in its surveillance aspect. The \$500 million project, spanning six ICDs, would have implications "for every woman in this room," Healy said.

Reporters pressed Healy for comment on her position regarding research with fetal tissue recovered from abortion. She used the opportunity to explain that the HHS moratorium on such work, in effect since November 1989, is "razor-sharp" in its application, restricting federal scientists only from using tissues recovered from elective abortion for use in human transplantation. Far from abandoning a promising new line of research, NIH continues to pursue fetal tissue studies. Healy said such efforts "will eventually result in transplants that are safer, more targeted, and more readily available."

As to the ban, "NIH will and must abide by the department's ruling," she said. "I have a moral responsibility to abide by that ruling, and I must say, I do it without hesitation."

Healy said that NIH "must find ways to attract and train and retain the best and brightest scientists...and to help them cope with the frustrations of research. Addressing the need of science includes particular outreach for minorities and women."

She quickly assured that these initiatives were not hers alone, but an expansion of efforts that were identified before she took office on Apr. 9.

Healy also called for long-term strategic planning, saying NIH owes the public "assurance that we know how to identify priorities, respond to emerging new scientific challenges, and remain sensitive to changing public need."

She emphasized good financial management and accountability for biomedical research, informing the media that NIH's Cost Management Plan, currently in draft, "is a start in the right direction."

Earlier that day, Healy opened an NIH conference on technology transfer—her fourth major priority—with remarks that emphasized her commitment to narrowing the lag between a clinically useful invention and bedside application.

"NIH has been the heaviest user of CRADAs (cooperative research and development agreements, between federal scientists and industry) of all federal laboratories," she said.

The new cooperation between scientists and private companies has raised questions about potential conflicts of interest, a subject Healy says will be addressed by guidelines currently being drafted.

"The idea (of technology transfer) is not to make scientists wealthy, but to bring cures to patients who need them," she said. "We have to ask ourselves (before entering CRADAs), 'Are we doing this for the right reason?' Ultimately, that answer is what matters most."

Healy fielded a variety of questions from the 48 reporters in attendance, who hailed from television, magazines and newspapers. Topics included:

Relations with Rep. John Dingell's oversight committee: "I have not met him in my current capacity, but I plan to in the next few weeks. I respect his authority and oversight responsibility."

(See Healy p. 16)

Healy (continued from p. 15)

The current "crisis" in science: "A 'sky is falling' mentality has been around for the past decade. I used to be skeptical (about it). I can remember in the mid-1980's, when I was at the White House (as deputy director of the Office of Science and Technology Policy) that I got about 6,000 letters describing a crisis in science. The letters ranged from all sorts of descriptions of distress including agonizing back pains from writing so many grant applications that were not funded. I must say, things are different now. The numbers speak for themselves."

The "scandal" over indirect costs: "I think we need to take a broader look at what is a systemic issue—it's not subject to a quick fix. This is not a new problem, but it is the first time people have been willing to tackle it." She said top NIH staff are part of an HHS working group on indirect costs. "NIH has scars and bruises from having looked into this issue in the past. The problem has been growing and developing for at least 20 years." More scrutiny and a method of incentives for saving money are potential cures, she said.

Science salaries and recruitment/retention of excellent scientists: "I am delighted that the SBRS (Senior Biomedical Research Service) will enable us to pay higher salaries, and to include Ph.D.s in eligibility for bonuses. I think NIH is approaching a more competitive stance." Healy said she recruited more than 50 scientists to the Cleveland Clinic when she directed the Research Institute there prior to joining NIH. "People don't go into science for the money. They go for the excitement of new knowledge and intellectual pursuit. It is a joyous career."

On fraud in research: "I personally don't think that fraud is that widespread." Healy did acknowledge, however, that the Office of Scientific Integrity "has been busy."

The new director demurred from answering questions about her private life, keeping the focus on her role as director.

Reminded by a reporter that, during Senate confirmation testimony, she insisted that science must make room both for its journeymen and its prodigies, Healy concluded, "Science cannot ultimately be regulated or contained in a box."

Healy Proposes Historic Women's Health Initiative

NIH director Dr. Bernadine Healy recently introduced a new 10-year, \$500 million women's health initiative that will make NIH host of the largest, most definitive study of its kind ever undertaken in the United States. A three-component effort, the initiative will include a large prospective surveillance program, a nationally based community prevention and intervention study and randomized clinical trials.

"This novel and ambitious study will be based on excellent science, exciting epidemiology and also is responsive to a pressing social need," said Healy, announcing the initiative on Capitol Hill Apr. 19.

Healy said one of the challenges of being named NIH director is to provide the science base to adequately address the unique needs of disease prevention and health promotion in women.

"Research in women's health is one of my personal priorities," said Healy. "NIH can rapidly and effectively apply its scientific and administrative resources to this imperative. NIH will do so."

The comprehensive women's health initiative will be coordinated by NIH's newest component—the Office of Research on Women's Health. Established last September, the office has a mission to improve the prevention, diagnosis and

treatment of illness in women and to enhance research related to diseases and conditions that affect women. Healy's new initiative will be the office's first major project since its establishment.

Six NIH institutes and a center—NCI, NHLBI, NIAMS, NIA, NIDDK, NICHD and NCNR—were named to conduct the research of the multidisciplinary initiative, which will investigate the effects and/or benefits of such lifestyle factors as diet modification and dietary supplements, smoking cessation and physical exercise.

Hormone replacement therapy, an important but so far controversial treatment for the symptoms accompanying menopause, will also be studied. According to Healy, women in today's society can expect to spend one-third of their lifespan in the postmenopausal state.

"The good news is that women live longer," said Healy, noting the society's "awakening" to the fact that women's medical problems differ significantly from men's. "The bad news is that women's quality of life, from a medical and behavioral perspective, is not what it could be."

Cancer, cardiovascular disease and osteoporosis are the three leading causes of death and disability among women in the United States, according to Healy, who also noted that women have greater morbidity and chronic debilitating illness than men and that women seek medical attention more often, take more medicine—especially antidepressants and tranquilizers—and undergo more surgical procedures. "In this era," Healy said, "we understand that while women are equal to men, they are also different from men. That differences may be present, without loss of equal opportunity, must now influence the health and biobehavioral research agenda, and continue to do so for the future."

Harden (continued from p. 1)

"Spotted fever is just one NIH story," says Harden, who has been at NIH since 1984. "I could easily list dozens more. We could keep several historians busy writing about the contributions of NIH scientists."

Ironically, time both forms the boundaries of Harden's investigations (her first book was *Inventing the NIH: Federal Biomedical Research Policy 1887-1937*) and circumscribes her efforts to elaborate what goes on within those limits. "If I only had time....," could be the historian's official motto.

Offering additional opportunities for investigation into the history of science are Harden's duties as director of the DeWitt Stetten, Jr. Museum of Medical Research, which was established as part of the NIH centennial observance. "The Stetten Museum has filled a need at NIH to collect, preserve, and exhibit instruments and other artifacts of biomedical research, especially relating to the intramural program," she said.

Documenting the history of AIDS at NIH is yet another project being pursued as time permits by Harden and one of her staff members, Dennis Rodrigues. "Because so much of today's activity is arranged over the telephone instead of by letter, we are trying to capture how the intramural NIH staff responded to AIDS by conducting oral histories. We have done 27 so far, with probably 100 to 200 still to do." The spoken histories will find a home at NLM's History of Medicine Division and in the National Archives.

Combining the oral histories with manuscript and published sources, she hopes to complete a book on the history of NIH intramural AIDS research, especially during the years before HIV was identified. "It will be a marvelous book to write—to detail the collaborations among experts in different institutes, the rise and fall of theories about etiology, the long hours spent by staff at all levels in treat-

ing AIDS patients in the Clinical Center," enthuses Harden.

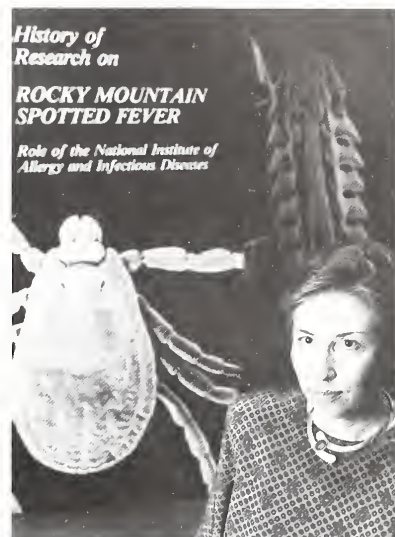
Yet she understands the pitfalls of writing about a subject with so many political overtones. "University-based historians are often highly skeptical of those of us who work for the government—that our work will be uncritical court histories glorifying the agencies," she said. Because of this, she prefers to publish where her work will be peer-reviewed. Long before the book on Rocky Mountain spotted fever (RMSF) was sent to a publisher, she said, she had sought advice on each chapter from many different scientists and historians. "None of the scientific experts ever pressured me to cast the story in a particular light," she said. "They were most generous, however, in providing an excellent scientific critique."

Harden also lauds supervisor Storm Whaley, NIH's associate director for communications. "He is just magnificent. His institutional memory about NIH—of individuals and of sources—has been incredibly valuable to me. And of course, he writes beautifully."

The advisory committee for the Stetten Museum also receives high praise. Comprised of NIH researchers and administrators, the committee "shares its wealth of knowledge about science and NIH—I can't say enough about its contributions," she said.

A native of Marietta, Ga., Harden planned to major in chemistry at Emory University in Atlanta. "In my sophomore year I took my first college history course at the same time I struggled with organic chemistry. I found that I enjoyed the hours in the library much more than the hours in the laboratory."

She trained as a history teacher and then took a master's degree in American history at the University of Florida. From 1968 to 1972 she taught at Huston-Tillotson College in Austin, Tex. Later she returned to her home town and taught high school social studies for 4 years.



This photo of Dr. Victoria A. Harden was taken in front of the NIAID exhibit on Rocky Mountain spotted fever, which is a part of the "Windows into NIH History" series sponsored by the DeWitt Stetten, Jr., Museum of Medical Research. The exhibit includes original bottles of the tick-tissue vaccine, samples of ticks in various stages of their life cycles, a table-top centrifuge, and an entomological microscope used by Dr. Ralph R. Parker.

"After earning extra money by writing curricula guides during the summers," she noted, "I discovered that I had an aptitude for researching and writing and, more importantly, that I really enjoyed it." She decided to return to Emory for her doctorate in history, and chose Professor James Harvey Young, a distinguished medical historian, as her dissertation advisor.

The first half-century of NIH history became her dissertation topic through a serendipitous discovery. "The papers of Charles Holmes Herty, a former president of the American Chemical Society, contained letters from Sen. Joseph E. Ransdell of Louisiana about their joint efforts to create a National Institute of Health."

(See *Historian* p. 18)

Historian (continued from p. 17)

Unable to find other sources about this story, she contacted Dr. Wyndham Miles at NLM. "He encouraged me to pursue the topic, because no one else had examined it yet." This study became both her dissertation and, after revision during a postdoctoral year at the Johns Hopkins Institute for the History of Medicine, her first book, *Inventing the NIH*.

As she was completing work on this book, Harden was invited by NIAID to write the history of Rocky Mountain spotted fever. "It was an ideal situation for a historian," she recalls. "For 2 years I did nothing but research, 8 hours a day." As NIH's centennial year approached, Harden began writing the RMSF book and discussing with Dr. DeWitt Stetten, Jr. his vision of a museum at NIH dedicated to medical research. Between helping Stetten launch his museum (NIAID had lent her to Stetten half time), aiding the centennial celebration, and writing about RMSF, she became hooked on the intellectual history of science.

Collaborating with institutes on exhibits for the Stetten Museum also provides an opportunity to point out how quickly the past can disappear. "Often institute representatives volunteer to locate old instruments for exhibit—'Everybody had one of them,' they will tell me. If much time has passed, they will be lucky to locate one!"

Time, the historian's bane and blessing, may not permit Harden to achieve everything on her ambitious agenda. For her part, she would be happy with a humbler legacy: "I want our office to serve the needs of the NIH community, whether that means finding biographical information on a scientist from the 1940's, researching material for an exhibit on an instrument developed in an NIH laboratory, or writing a book on AIDS. That is the value of an in-house history office."

About the Prize, the Book and Its Subject

The Adams Prize that Harden recently won for her book on RMSF recognizes the book published in the previous year that makes the most significant contribution to the understanding of the history of the federal government.

NIAID and its predecessor laboratories, especially the Rocky Mountain Laboratory (RML) in Hamilton, Mont., have supported research on RMSF since 1902, making it one of the oldest continuing investigations by the federal government. Harden's book is dedicated to the late Dr. John R. Seal, former NIAID deputy director, who envisioned the history, and to Dr. William L. Jellison, a retired RML entomologist who devoted time, effort and personal resources to preserving the history of RMSF.

RMSF was first distinguished from other diseases during the late 19th century, and all of the research on it was conducted during the 20th century. In the 1920's, Drs. Roscoe R. Spencer and Ralph R. Parker of the U.S. Public Health Service developed a vaccine against RMSF made from the bodies of ground-up ticks. Harden's book details the resourcefulness and ingenuity employed in rearing millions of ticks each year to make this vaccine. The RML was built expressly to produce this vaccine.

In the 1930's, another federal scientist, Dr. Herald R. Cox, discovered that the rickettsial organisms that cause RMSF would grow in fertile hens' eggs. This not only revolutionized RMSF vaccine production but also provided a means to prepare the vaccine against epidemic typhus that protected

Allied troops during World War II.

After 1948, when broad-spectrum antibiotics were discovered that cured RMSF, research on the disease dropped off dramatically. During the 1970's, however, the number of cases of RMSF began to rise inexplicably, and NIAID investigators at the RML contributed to several new discoveries about this disease. Dr. Gregory McDonald and his colleagues produced a candidate subunit vaccine that is currently undergoing evaluation. Dr. Willy Burgdorfer and his associates made several contributions, and, in a classic example of scientific serendipity, uncovered the organism that causes Lyme disease while researching RMSF.

"When I began research for this book," Harden said, "I had no idea that the history of RMSF could illuminate the entire 20th century history of infectious disease research so clearly." She also credited the early investigators who saved their correspondence files and Nick Kramis, the RML photographer who labeled and indexed a collection of photographs about RMSF research. "It made my job much easier," she said.

Crediting the author herself in a book review that appeared Mar. 22 in *Science* is Duke University's Robert Korstad: "The prose is lively...Harden wishes her study to be read as a 'romance' about the efforts to diagnose, prevent, and treat spotted fever, and her affection for the determined researchers is evident throughout. But the book has more the feel of a good detective novel...Her excellent study greatly increases our knowledge and understanding..."

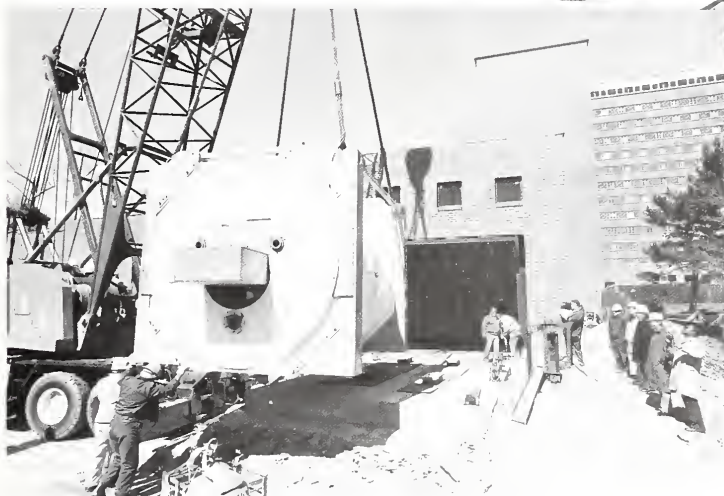
Physical Changes Around the NIH Campus



The newly constructed Bldg. 6B, the first disease-free animal facility on NIH's campus, recently opened its doors to occupants. The uniquely sterilized structure will house such landlubbers as rabbits, mice, rats, hamsters and guinea pigs as well as such aquatic species as frogs, fish and sea urchins. At the building's open house, Dr. Arthur Levine, scientific director for NICHD, which is the facility's lead institute, said, "This is not just a facility for the superb care of animals, but a place where scientists will continually discuss what is the right thing to do in terms of using animals for research."



Bldg. 49 dwarfs NIDR's Bldg. 30 (r) and only appears, from this perspective, to be larger than the CC (l). Construction will be complete in fall 1992, according to project officer Steve Hagan of ORS. The south side of the building, shown above, will be the entrance to the facility housing researchers from seven institutes, primarily NICHD.



A 56-ton magnet, a noninvasive diagnostic tool used in magnetic resonance imaging, was recently transported to NIH from Schenectady, N.Y. Installation of the device into a newly constructed annex of Bldg. 10 required the aid of a crane and several workmen. The magnet is now installed in the In Vitro NMR Research Center annex.

Staunch Patron of NIH**Research Bldg. 36 Renamed in Honor of Lowell Weicker***By Rich McManus*

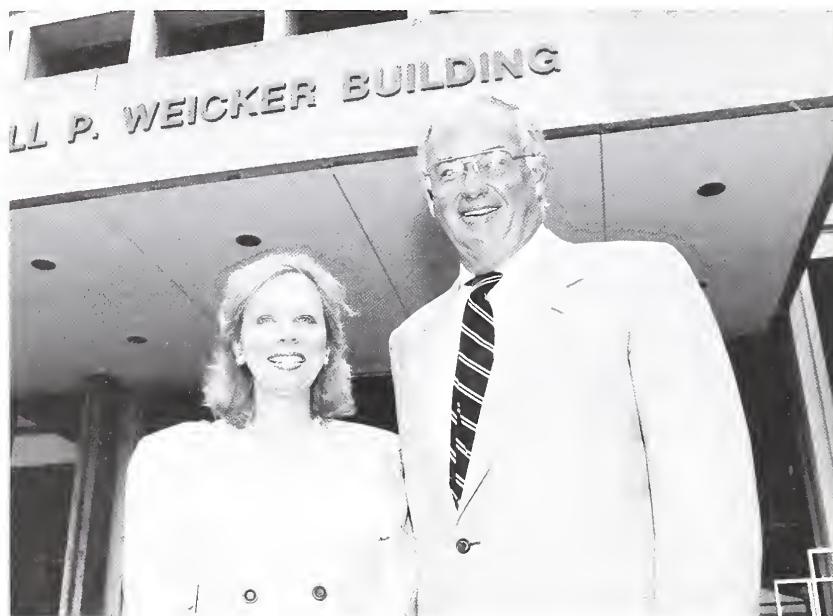
Gov. Lowell P. Weicker, Jr., of Connecticut came to the renaming of NIH's Bldg. 36 in his honor on May 30 with a sober and humble message to America—it's a shame we spend so little on biomedical research.

Carrying no prepared remarks, the 20-year veteran of Congress spoke instead from his heart.

"I doubt many people in this country know about NIH or about this building," he said, downplaying whatever personal grandeur NIH may have hoped to bestow on him. "But this little plot of land is our only hope to relieve death and disease." Though pleased to see his name emblazoned above the entrance by act of Congress, Weicker said that, after the hoopla, he was "just going out in the field to do what I do best—articulate your brilliance, so that health and life become the number one priority of the United States of America."

"It is hard to imagine a stauncher friend and more determined advocate of NIH than Lowell Weicker," said NIH director Dr. Bernadine Healy, who introduced him. "Over the 20 years that he served in the Congress he held to the unyielding conviction that biomedical research was absolutely vital to the future of this nation. And, as any senator can tell you, Senator Weicker was not someone you willingly opposed when he was holding an unyielding conviction."

Weicker's 18-year tenure in the Senate was marked by advocacy for biomedical research. For 4 years, 1983-87, he was chairman of the Labor, Health and Human Services Subcommittee of the Appropriations Committee, in effect the purser for NIH. He blocked spending cuts aimed at biomedical research during the Reagan years and obtained substantial



Standing in front of the former Bldg. 36 at a dedication ceremony on May 30 are NIH director Dr. Bernadine Healy and Gov. Lowell P. Weicker, Jr., of Connecticut, whose 20 years in Congress as a friend of NIH were memorialized. A plaque inside the building honors Weicker's advocacy of biomedical research.

increases in spending for NIH and NIMH. During his chairmanship, NIH funding increased from \$4 billion to \$6.7 billion.

"Nothing like this has ever happened to me in my long political career," said the governor who, together with Healy, pulled a cord unveiling the building's new name.

Redirecting praise from himself to the people who work in NIH labs, many of whom were peering out at the festivities from windows in Bldgs. 35 and 36, Weicker said, "I want you to know how much the nation owes to you (the audience of dignitaries), and to the people who work in this building.

"It must be discouraging to do your work, succeed at it, and get no recognition whatsoever," he said, lamenting the

country's evidently low priority on research. "The best hope of this nation overcoming its health care costs lies on this campus and in what you do here."

Weicker said the country's recent interest in the high cost of health care has long been his concern.

"All of a sudden the country has discovered that health care costs are too high. Well, I thought they were too high last year, and the year before that, and the year before that. We spend \$700 billion on health care every year in this country, both publically and privately, and only 3 percent of that sum goes to research.

"The disgrace is not the high cost of health care. It is the low investment in research—that is the disgrace."

Before he ran successfully for gover-

CALENDAR

SEPTEMBER

An exhibit on midwifery will be on display in the front lobby of the NLM (Bldg. 38, 8600 Rockville Pike) from Sept. 1 to Dec. 31, 1991. The exhibit, prepared in conjunction with the American College of Nurse-Midwives (ACNM), will illustrate important moments in the development of midwifery from the 16th century to the present.

In conjunction with the exhibit, the ACNM and NLM are sponsoring a symposium on the history of midwifery. It will feature presentations by professional historians and midwives on the development of midwifery in this country. The symposium will be held in the Lister Hill Auditorium in Bldg. 38A from 2 to 5:30 p.m. on Friday, Oct. 11. A reception for attendees will follow. For more information about the symposium or the exhibit, contact the History of Medicine Division, NLM, (301) 496-5963.

OCTOBER AND BEYOND

The Foundation for Advanced Education in the Sciences will present its 1991-1992 Chamber Music Series: The concerts are held on Sundays at 4 p.m. in Masur Auditorium, Bldg. 10. The dates are: Oct. 6, Carol Wincenc and friends; Oct. 20, Auryl Quartet and Lilian Kallir; Nov. 17, Michel D'Alberto; Dec. 8, New World Quartet; Jan. 5, 1992, Pamela Frank; Jan. 19, David Geringas; Feb. 2, Beaux Arts Trio; Feb. 16, Robert Holl; Mar. 15, Ilan Rechtman. For more information about tickets call (301) 496-7976.

"Medicine for the Public," is a series of seven lectures by NIH physicians on the human body—in health and disease—sponsored by the Clinical Center, NIH. All lectures are at 7 p.m. in Masur

Auditorium. The Fall 1991 schedule is: Oct. 1, "Food Allergy and Intolerances," Dr. Dean Metcalfe, NIAID; Oct. 8, "Hyperactivity," Dr. Alan Zametkin, NIMH; Oct. 15, "Aging: Causes and Consequences," Dr. George Martin, NIA; Oct. 22, "New Directions in Bone Marrow Transplantation," Dr. Ronald Gress, NCI; Oct. 29, "Sports and Exercise," Dr. Steven Gordon, NIAMS; Nov. 12, "Gene Therapy: Medicine of the Future," Dr. R. Michael Blaese, NCI. For more information, call (301) 496-2563.

The DeWitt Stetten, Jr. Museum of Medical Research will open an exhibit on the Van Slyke manometric apparatus on Friday, Oct. 18 with a seminar in Bldg. 31, Conf. Rm. 8, at 2 p.m. The speakers will be Dr. Rollin Hotchkiss and Dr. Reginald Archibald. For information, contact the museum director, Dr. Victoria Harden, (301) 496-6610.

NIHAA EVENTS

There will be a reception honoring Dr. Joseph L. Goldstein on Sunday evening, Sept. 22, 1991, from 6 to 7:30 p.m. at the Bethesda Marriott. On Monday, Sept. 23, 1991, from 8:30 a.m. to 12 noon in Masur Auditorium there is the alumni symposium. Details about the program and other Research Festival '91 activities are on pp. 1, 5-6 of *Update*.

A celebration of "Fifty Years in Bethesda," commemorating NIH's move from Washington, D.C., to Bethesda, will be held on Saturday, Nov. 23, 1991, from 2 to 6:00 p.m. at the Mary Woodard Lasker Center (the Cloister, Bldg. 60).

For more information about various lectures and events at NIH, call (301) 496-1766. For information about NIHAA call (301) 530-0567.

nor of Connecticut last fall as an Independent, Weicker had been founding president of Research!America, a grassroots organization aimed at increasing public awareness of the importance of biomedical research. His message there was the same as it is today—the key to lowering health care costs lies in boosting funds for basic research.

"The mechanisms are in place to fund biomedical research," he said. "What it needs now is the funding. I read about the difficulties that the research community has encountered in recent years. What is needed by the nation is an understanding of this whole process."

Weicker said he got back into politics largely to maintain his advocacy of medical research.

"I think I have a larger role (than governor) to all 50 states," he said, "to educate them about NIH. As governor, I will continue to hammer away at what has been my life's work. All the people of this nation should treasure NIH and the work that goes on here."

Before leaving the podium to a standing ovation from an audience of NIH officials who had congregated under a tent erected outside the Weicker Bldg., the governor said, "Thanks for putting the Weicker name on the greatest endeavor of our government."

During his brief remarks, Weicker expressed confidence that, in Bernadine Healy, NIH's mission was "in very good hands."

In her introduction, Healy had said, "It seems fitting that Congress decided to name this building after someone whose daring and caring is so much at one with NIH's style and substance. With the same independence and innovation, the same tenacity and vigilance, NIH and Lowell Weicker have been one in pursuing the business of hope."

The Weicker Bldg., completed in 1968 at a cost of \$13.4 million, comprises 184,217 square feet, "which is just a little larger than the state of Connecticut," quipped Healy.

NIHAA Holds Party at Italian Embassy

On Tuesday, May 21, the NIH Alumni Association held a successful and enjoyable reception at the Embassy of Italy in Washington, D.C. The party was attended by NIHAA members, guests, embassy personnel, and visiting Italian scientists at NIH.

More than 200 guests were welcomed by Dr. Emanuele Mannarino, science attache, and Dr. Gordon D. Wallace, NIHAA president. Then both Ambassador Rinaldo Petignani and Dr. Bernadine Healy, NIH director, spoke to the audience gathered in the main room of the chancery.

"We are particularly pleased that our visiting scientists from Italy are the honored guests tonight," said Healy. "I speak for the NIH community in saying that the presence of our Italian colleagues adds immeasurably to the vigor and depth of our intramural research activities."

The reception was supported by a contribution from the Sigma-Tau Foundation, a philanthropic organization dedicated to advancing dialogue and understanding between scientific and humanistic cultures.

Among those attending the reception were (from l) Dr. Sheldon Cohen, NIAID; Constance Dillman, Dr. John Utz, Georgetown University Hospital; Caroline Davis and Dorothy Utz.



Dr. Bernadine Healy, NIH director, talked with Ambassador Rinaldo Petignani of Italy.



The courtyard of the Italian Embassy provided a beautiful setting for the party.



Standing together at the party were (from l) Dr. Ugo Rysamonti, NIDR, now in South Africa, Dr. Francesco Merelli, NICHD, and Dr. Pietro Pietrini, NIA—all visiting scientists from Italy.

Photos: Bill Branson



Attending were (from l) Dr. Abner Notkins, director of intramural research, NIDR; Dr. Peter Greenwald, director of NCI's Division of Cancer Prevention and Control; and Dr. James Duff, chairman, NIHAA Washington chapter and retired NCI scientist.



Dr. Michele Carbone (l), visiting scientist at NICHD, talked with Dr. Harold "Red" Stewart, scientist emeritus at NCI.



Enjoying the Italian food were Dr. Philip Chen (l), NIH associate director for intramural research, and Dr. Vaman S. Waravdekar, retired NCI scientist.



Eleanor Condliffe (l) visited with Dr. Seymour Wollman, NCI scientist emeritus, and his wife Cecelia.



Gathering at the Italian embassy reception were (from l) Dr. S. Aloj, University of Naples, presently with Walter Reed Hospital; Ambassador Petrigani; Giulia Celli, technical assistant, Dr. Francesca Lancillotti, guest researcher, and Dr. Luigi DeLuca—all from the Laboratory of Cellular Carcinogenesis and Tumor Promotion, NCI.



At the end of the reception Dr. Giorgio Bartolomucci (l), executive director, Sigma-Tau Foundation, spoke to the group, especially the visiting Italian scientists at NIH. Dr. Emanuele Mannarino, science attache at the embassy, was standing in the background.

Aging of Individuals and Of Society: Concepts, Challenges and Priorities

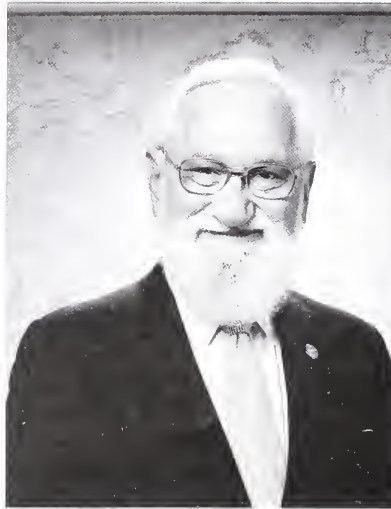
By Dr. Albert B. Sabin

Editor's note: This is excerpted from an essay given by Dr. Sabin as the Florence Mahoney Lecture on Aging, National Institute on Aging, NIH, Oct. 3, 1990.

As a research scientist and physician I have spent my life acquiring new knowledge needed for the understanding and prevention of diseases that brought misery and premature death to many who have not yet begun to live. My special concern now for older persons is for all those who cannot help themselves, that society will do everything possible first of all to eliminate the misery that is especially a part of the last years of life—the misery that comes not only from disabling chronic disease, but also from poverty, loneliness and limited resources for enjoying life—and for dying with dignity, i.e., without pain and quickly, without unnecessary prolongation by modern technology—the best being to go to sleep and not wake up or to die suddenly while reading a truly interesting book or listening to soul-stirring music. It has happened to some of my friends—why not to me and to all? Thus, I have often said that a most important goal for biomedical and sociologic research in the present era should be to make it possible for everyone to die in good health at the end of a reasonable life span with mental and physical capacities reasonably unimpaired.

Vicissitudes of Becoming Old

In a 1985 lecture to the American Gerontological Society, Dr. T. Franklin Williams, director of the National Institute on Aging, said that he banished the



Dr. Albert B. Sabin

following words from his own usage: "senility" and "senile dementia" because they carry the mistaken implication of inevitable failing in old age; and the words "the elderly" and the "aged" because they mistakenly imply that older people can be lumped together as a single group. Instead he speaks of "older persons" (Williams, T. F., *The Gerontologist*, 26: 345-349, 1986). Dr. Williams was undoubtedly influenced by the excellent, long-standing Baltimore longitudinal study of normal human aging (*Older and Wiser*, NIH Pub. No. 89-2797, September 1989), which has been called "the original myth buster." Here are some of the "busted myths":

1. Cardiac output invariably declines with age—it doesn't.
2. Personality changes with age—on the contrary the study showed that human personality remains remarkably stable. I found that Plato, in the 4th century B.C., reached a similar conclusion when he said: "He who is of a calm and happy nature will hardly feel the pressure of age but to him who is of an opposite disposition youth and age are equally a burden" (*The Republic, Book I*, 329-D).

3. Aging is a disease—it is not; individuals age differently.

4. The nervous system degenerates greatly with age—it does not in the absence of disease. The changes that do occur with age do so gradually, and sudden physical or psychological changes are most likely due to disease and not to normal aging.

5. Hypochondria is associated with age—it isn't; it is associated with personality.

Perspectives on Longevity

At the present time about 75 percent of the deaths in older persons in the U.S. are caused by heart disease, cancer, and stroke. It has been estimated that eliminating deaths from heart disease would add some 7 years to life expectancy at age 65. If cancer were entirely eliminated as a cause of death, life expectancy at age 65 would be extended by 2 years, and more persons would then die of heart disease and other causes. For me, it is the misery caused in older persons by chronic heart disease, cancer and stroke and not death that should form the basis for the ongoing search for greater understanding and ultimate elimination of these diseases. And for me by far the greatest tragedy among older persons is the loss of normal brain function—Alzheimer's disease and other irreversible dementias. When you irreversibly lose your brain you stop being a person and life as a human being stops.

Challenges of Aging to Society

There can be no question of the debt that a civilized society owes to its elderly population—it is the work of their hands and brains that has made our present way of life possible. However, it seems to me important to realize that the vast majority of the older population in the U.S. is self-sufficient and does not need public support. Accordingly, public and social re-

sponsibility should, in my view, be limited to the many millions who cannot help themselves. Although many approaches are being discussed to limit the economic burden of helping the many elderly helpless millions, I believe that future public health care will have to be freed from the professional fee for service, the rising costs of high-technology medicine, and the huge hospital costs. There should be a universal type of pre-paid health insurance from birth to death such as is already being supplied by our best health maintenance organizations.

Death with Dignity

I have already said that I hope that the current prerogative of the few who die in their sleep or suddenly at the end of a full life while still in reasonably good mental and physical health—as if by the running down of the “biological clock”—may become the privilege of all. But until that time comes we should not artificially prolong life after it has irreversibly reached its end, just because we have learned how to do it. Misery and suffering should not be allowed to plague the last years of our life, and society should develop safeguards for euthanasia. Human dignity requires not only a good birth but also a good death.

Mission of the NIA

In 1974, the National Institute on Aging was established “to promote better health and more effective functioning of older Americans.” In its 1987-1988 report, the Advisory Council of this institute, while supporting the biological, clinical, epidemiological, behavioral, social and economic research on aging, said that “the special mission of NIH should be to understand the fundamental mechanisms of aging.” I think that the work the institute is now sponsoring on

Alzheimer’s disease, which by 1990 estimates is the cause of devastating misery for about 4 million Americans age 65 and older, and even more so for their families, at an estimated cost of about \$88 billion a year, should among the other disorders that make the last years of our life miserable receive the greatest emphasis. I believe Alzheimer’s disease is by far more important than AIDS as a national problem and should have much more public money allotted to it for research and care. In a June 25, 1990, *Time* magazine essay, Charles Krauthammer said: “Except for cancer, AIDS now receives more government research money than any other illness in America. AIDS is not everyone’s problem. . . (but) gets \$1.2 billion to \$1.3 billion. Heart disease, for example, receives about half as much, \$700 million. The AIDS research allocation is not only huge, it is hugely disproportionate.” I agree, and believe that Alzheimer’s disease should receive more government support than AIDS. When Albert Einstein was still writing in German he called our age: “Eine Zeit vollkommener Mittel und verworrener Ziel”, i.e., an age of perfected methods and confused aims.

Dr. Sabin closed with stanza II from Swinburne’s poem, “The Garden of Proserpine”:

“From too much love of living,
From hope and fear set free,
We thank with brief thanksgiving
Whatever gods may be
That no life lives forever;
That dead men rise up never;
That even the weariest river
Winds somewhere safe to sea.”

Dr. Sabin is a senior medical science advisor at the Fogarty International Center and a member of the NIHAA Board of Contributing Editors.

UAB Organizes Local NIHAA Chapter

At the invitation of Dean James A. Pittman, Jr. (NCI 1954-56), Drs. J. Edward Rall, former NIH deputy director for intramural research, and Thomas Kennedy, Jr., NIHAA, flew down to Birmingham, Alabama, on Apr. 5 to explore the possibility of forming a local chapter of the NIH Alumni Association. The visitors were given a royal reception. For lunch, Pittman assembled at the Center for Advanced Medical Studies Kenneth Roizen, Jim Lewis, Jay McDonald, Simon Gelman, George Barber, Jimmy O’Neill, Max Cooper, John Peters, Bill Scott, Will Deal, Bill Brinkley, Dick Marchase, Stephen Harvey and Antonietta Hyche. The splendid cuisine was outdone only by the camaraderie. After lunch, Rall and Kennedy had the opportunity to chat with Charles Buggs, Max Cooper, Claude Bennett and Bruce Greene about their current research activities.

The formal organizational program began in the late afternoon in the Margeret Cameron Spain Auditorium, where about 100 alumni had gathered. Rall talked about “NIH, Present, Past and Future.” Kennedy followed with a pitch about what an alumni association might be uniquely able to accomplish for the NIH in particular and for the biomedical research community in general. Pittman thereupon appointed the following members of the UAB faculty to serve as an alumni association organizing committee: Dr. David G. Warnock, (NHLBI 1973-75), chairman, Dr. Charles O. Elson, III, (NCI 1976-80), Dr. William J. Koopman, (NIDR 1975-78), and Dr. J. Claude Bennett, (NIAMD 1962-64).

The activities related to the NIHAA were held in conjunction with UAB’s anniversary
(See Chapter p. 31)

NIH Notes for March— June 1991

HONORS AND AWARDS

Valerie Barbour, NEI personnel officer since 1987, was selected 1991 recipient of the Senior Professional Award presented by the Montgomery County Chapter of the International Personnel Management Association for her "dedicated and outstanding contributions in the personnel management field, and her continual efforts to initiate total quality management at the NEI." She has worked at NIH for 23 years, 15 of which have been in the personnel management field ... **Dr. John E. Bennett**, head of the clinical mycology section in the Laboratory of Clinical Investigation, NIAID, was elected a Master in the American College of Physicians for his distinguished contributions to the medical profession ... **Glen Bennett**, coordinator of NHLBI's Smoking Education Program, received the Army's Outstanding Civilian Service Medal for developing and teaching a series of smoking cessation training programs for Army physicians ... **Dr. Roscoe O. Brady**, chief of the Developmental and Metabolic Neurology Branch, NINDS, was recently awarded the Jessie Stevenson Kovalenko Medal by the National Academy of Sciences for his "outstanding and revolutionary work" in research on human sphingolipid storage disorders ... **Dr. Samuel Broder**, NCI director, was honored by the Institute for Advanced Studies in Immunology and Aging with its 1991 Lifetime Science Award. He was cited for his "pioneering efforts which have led to the first effective antiviral drugs to treat AIDS." He also received from the National Coalition of Hispanic Health and Human Services Organization its National Hispanic Award because he "has consistently emphasized the importance of reaching out and tailoring cancer prevention and control efforts" to Hispanics and other populations ... **Dr. Maurice B. Burg**, chief of the Laboratory of Kidney and Electrolyte Metabolism, NHLBI, has been elected to membership in the National Academy of Sciences ... **Dr. Willy Burgdorfer** was recently presented with the Walter Reed Medal of the American Society of Tropical Medicine and Hygiene by Dr. John David at the 39th annual meeting of the society. Burgdorfer, scientist emeritus at NIAID's Rocky Mountain Laboratories in Hamilton, Mont., received the

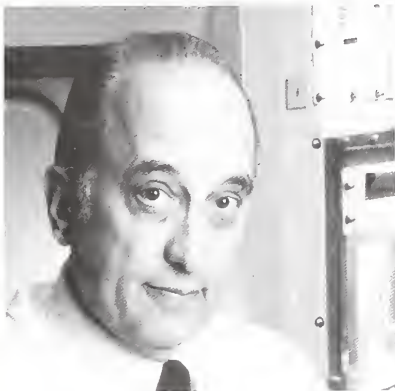


Dr. Willy Burgdorfer (r) was presented with the Walter Reed Medal of the American Society of Tropical Medicine and Hygiene by Dr. John David.

award for his scientific contributions during 35 years with NIAID; his pioneering work in arbovirology, rickettsiology, and relapsing fever spirochetes; and his discovery of the spirochete that causes Lyme disease, *Borrelia burgdorferi* ... **Dr. Fernando Cassorla**, NICHD's clinical director, was presented with the Clinical Teacher Award by the NIH's Office of Education. He was cited for his "excellence in teaching clinical medicine" and his significant contributions to the diagnosis and treatment of disorders of puberty, particularly as they relate to bone growth ... **Dr. Charles L. Coulter**, director of NCRR's Research Facilities Improvement Program and acting director of its Biomedical Research Technology Program, has been elected to the rank of fellow of the American Association for the Advancement of Science. He was nominated "for work in guiding many NIH programs in biophysics, cell biology and medical research" ... **Dr. Felix F. de la Cruz**, chief of the Mental Retardation and Developmental Disabilities Branch, NICHD, received an award from the president's committee on mental retardation for his outstanding contributions to the field of mental retardation research ... **Dr. Anthony S. Fauci**, director of NIAID, was recently elected a fellow of the American Academy of Arts and Sciences. He also received in May an honorary doctor of science degree from St. John's University in Jamaica, N.Y. ... **Dr. Joseph F. Gallelli**, chief of the Clinical Center's pharmacy department, received the Distinguished Alumni Award from Long Island University on June

2. He received a B.S. from LIU in 1957 and the award is given for exceptional achievement and scholarship by an alumnus ... **Dr. Victoria A. Harden**, NIH historian and curator of the DeWitt Stetten, Jr. Museum of Medical Research, was awarded the Henry Adams Prize of the Society for History in the Federal Government at the society's annual meeting on Apr. 22. The Adams prize annually recognizes the book published in the previous year that makes the most significant contribution to the understanding of the history of the federal government. Her book, *Rocky Mountain Spotted Fever: History of a Twentieth-Century Disease*, was prepared for NIAID ... **Dr. Miles Herkenham**, chief of the section on functional neuroanatomy, Clinical Neuroendocrinology Branch, NIMH, was the 1991 recipient of the Mathilde Soloway Award for outstanding achievement in scientific research. He delivered a lecture on his work May 21 entitled "Understanding Drug and Neurotransmitter Actions in the Brain" ... **Dr. Alan Hinnebusch**, chief of NICHD's Laboratory of Molecular Genetics, presented the annual Hoffman-LaRoche Lecture at the New York Metropolitan Area Yeast Molecular Biology Meeting. He was honored for his notable contributions to the field of yeast genetics ... **Dr. Jay Hoofnagle**, director of NIDDK's Division of Digestive Diseases and Nutrition, has been selected by the Rotterdam Liver Foundation to receive the first Appel Prize for "breakthrough work in hepatology in the last 5 years" ... **Dr. Jon Huibregtse**, a postdoctoral fellow at NCI's Laboratory of Tumor Virus Biology since 1989, won a postdoctoral fellowship from the American Cancer Society to continue his research on papillomaviruses in human cervical cancer ... **Dr. Ruth L. Kirschstein**, NIGMS director, received an honorary doctorate from Long Island University on May 29. The degree, a doctor of humane letters, is her fourth honorary doctorate. She received a B.A. from LIU in 1947 ... **Dr. Herbert C. Landsell**, a health scientist administrator in the Division of Fundamental Neurosciences, NINDS, has been elected to a 3-year term on the Council of the American Psychological Association ... **Dr. Robert J. Lutz** of the Biomedical Engineering and Instrumentation Program, NCRR, has received the 1990 Washington Academy of Sciences Award for Outstanding Achievement in the Engineering Sciences ... **Dr. Louis H. Miller**, chief of the malaria section in NIAID's Laboratory of Parasitic Diseases, has been elected to membership in the Institute of Medicine of the National

Academy of Sciences ... **Eleanor Nealon**, chief of NCI's Reports and Inquiries Branch in the Office of Cancer Communications, was given the 1991 Fox Chase Cancer Center Communication Award for her role in raising public awareness about cancer and related issues ... **Dr. Karin Nelson**, NINDS Neuroepidemiology Branch medical officer, recently received the Child Neurology Society's 1991 Hower Award in recognition of her creative contributions to the study of child neurology ... **Dr. Robert B. Nussenblatt**, clinical director and acting scientific director of NEI, has been selected as co-recipient of the 1991 Proctor Medal for excellence in basic and clinical eye research ... **Dr. William Paul**, chief of NIAID's Laboratory of Immunology, was recently a Wellcome professor at Wayne State University School of Medicine in Detroit, where he also delivered the Wellcome Lecture on "Interleukin 4: Function and Regulation of Production" ... **Dr. Joram Piatigorsky**, chief of NEI's Laboratory of Molecular and Developmental Biology, delivered the G. Burroughs Mider Lecture on Apr. 3. The title of his lecture was "Gene Sharing: Lens Crystallins, Enzymes, and Stress Proteins" ... **Dr. Roger J. Porter**, NINDS deputy director and a captain in the Commissioned Corps, has been awarded the U.S. Navy Commendation Medal for his initiative and dedication to training residents, interns and medical students as a consultant to the National Naval Medical Center ... **Dr. Steven A. Rosenberg**, chief of NCI's Surgery Branch, received from the Institute for Advanced Studies in Immunology and Aging its 1991 Lifetime Science Award for his development of cancer immunotherapy using tumor infiltrating lymphocytes and interleukin-2. He also received the Karnofsky Award at the 27th annual meeting of the American Society of Clinical Oncology in May. He used the occasion of the award lecture to talk about the possibilities for cancer treatment in the future ... **Dr. Bernard A. Schwetz**, chief of the Systemic Toxicology Branch, NIEHS, was named the winner of the Arnold J. Lehman Award from the Society of Toxicology at its national meeting in Dallas. The branch he heads conducts research to help characterize the toxicological profile of chemicals, to improve the methods for toxicological evaluation, and to understand better the mechanism of the toxicity of selected chemicals and the award recognizes his contributions to the field ... **Dr. Thomas A. Waldmann**, chief of NCI's Metabolism Branch, has been awarded the 1991



Artois-Baillet Latour Health Prize for his contributions to the development of monoclonal antibodies in diagnosis and immunotherapy ... **Dr. Watt W. Webb**, a Fogarty scholar-in-residence from Cornell University, was awarded the American Physical Society's 1991 Biological Physics Prize. The society cited him "for his seminal work on the biophysics of cell membranes and cell motility, for his dedicated training of future generations of critical biophysicists, and his longstanding contributions to the biophysics community." While at NIH, he has been evaluating new physical optics instrumentation for use in biophysical research and studying cell surface receptor dynamics, including collaborative studies of the immunoglobulin-E receptor with Dr. Henry Metzger, scientific director of NIAMS ... **Dr. Eugene C. Weinbach**, chief of the physiology and biochemistry section in NIAID's Laboratory of Parasitic Diseases, was honored at a recent meeting of the NIH Library committee for his 13 years of generous service as its chairperson ... **Gladys M. Whitted** of NIH's Division of Procurement recently received an advocacy award from the White House Conference on Small Business, Minority Delegates' Caucus Inc., for "her tireless efforts in bringing small and minority businesses into the procurement mainstream of the National Institutes of Health" ... **Mary Ann Wilson**, NINDS Neuroepidemiology Branch secretary and Neurofibromatosis, Inc. board member, was awarded the 1990 DHHS Public Health Service Award for Exceptional Achievement in Orphan Products Development. She was commended for her contributions to the passage of the Orphan Drug Act and her efforts to encourage voluntary health organizations to work together to find a cure for orphan diseases.

APPOINTMENTS AND PERSONNEL CHANGES

Dr. Michelle Broido, associate professor of chemistry at Hunter College of the City University of New York and the director of CUNY's nuclear magnetic resonance facility, has been appointed a program administrator in the Biophysics and Physiological Sciences Program, NIGMS. She will be responsible for research and research training grants in the areas of structural biology, the structure and dynamics of proteins, and nuclear magnetic resonance spectroscopy ... **Dr. Michele Carter** has been named acting chief of the Clinical Center bioethics program. Her predecessor, **Dr. Alison Wichman**, resigned as chief in order to take a joint position as clinical neurologist in NINDS and a consultant in the bioethics program ... **Dr. Anne Clark**, a grants associate with NIH's Office of Extramural Programs, has been appointed scientific review administrator of the lung biology and pathology review committee in the Referral and Review Branch of the Division of Research Grants ... **Dr. Bruce Howard**, senior investigator in NCI's Laboratory of Molecular Biology, has been chosen chief of a new molecular biology laboratory named the Laboratory of Molecular Growth Regulation. It was established by NICHD to expand its studies of the molecular control of growth ... **Dr. Classie G. Hoyle**, associate professor of community and preventive dentistry, assistant to the dean, and director of planning and development in the College of Dentistry at the University of Iowa in Iowa City, has been appointed as a special expert in science education for NIGMS and its minority programs ... **Dr. Daniel C. Ihde**, chief of the clinical investigations section of the NCI-Navy Medical Oncology Branch and editor-in chief of the *Journal of the National Cancer Institute*, has been appointed NCI deputy director ... **Dr. H. Clifford Lane** has been appointed clinical director of NIAID. He will continue to serve as chief of the clinical and molecular retrovirology section of the Laboratory of Immunoregulation, NIAID ... **Dr. Judith H. LaRosa**, coordinator since 1989 of the National Heart Attack Alert Program and since 1978 of the Workplace Initiative, both at NHLBI, has been named deputy director of NIH's Office of Research on Women's Health ... **Dr. Yvonne Maddox**, a health scientist administrator at NIGMS since 1985, has been appointed deputy director of the NIGMS Biophysics and Physiological Sci-

(continued on p. 28)

NIH Notes (continued from p. 27)

ences Program ... **Dr. Bruce Nisula**, chief of the section on medical endocrinology, NICHD, has been named head of the Developmental Endocrinology Branch, NICHD's largest clinical program ... **Geraldine Pollen**, chief of the Office of Information and Legislative Affairs, NCNR, has been appointed executive director of the NIAMS Advisory Board. She will also serve as special assistant to the director, NIAMS ... **Dr. J. Edward Rall**, deputy director for intramural research at NIH since 1983, has returned to NIDDK's Clinical Endocrinology Branch ... **Gloria Richardson**, DCRT's administrative officer for nearly 13 years, has been chosen EEO officer for DCRT ... **Dr. Allen Spiegel**, chief of NIDDK's Molecular Pathophysiology Branch, has been named director of NIDDK's Division of Intramural Research. He is known for his research on the function and structure of G proteins ... **Dr. Stephen E. Straus**, chief of NIAID's medical virology section, has been appointed chief of the Laboratory of Clinical Investigation, a major component of the institute's intramural clinical program ... **Dr. Warren Strober**, chief of the mucosal immunity section in NIAID's Laboratory of Clinical Investigation, has been named deputy director of NIAID's Division of Intramural Research ... **Dr. Alan P. Wolffe** of NIDDK's Laboratory of Molecular Biology has been recruited to head a new Laboratory of Molecular Embryology, which has been founded by NICHD to understand how the development of the embryo is controlled at the level of the gene ... **Andrew Tartler**, executive director of The Children's Inn at NIH, left there at the end of March to return to NIH as deputy director of the Division of Technical Services, Office of Research Services ... **Dr. Joshua Zimmerberg**, who has been with the Laboratory of Biochemistry and Metabolism, NIDDK, has been named chief of the Laboratory of Theoretical and Physical Biology at NICHD.

RETIREMENTS

Dr. James B. Carlos, chief of the Epidemiology Branch in the Epidemiology and Oral Disease Prevention Program, NIDR, retired on Feb. 1 after 23 years with the institute. He came here in the late 1960's to conduct applied research for the institute. In 1972 he was appointed NIDR associate director for the National Caries Program. This program, the first targeted research program at NIDR, and the first program at NIH to combine intramu-

ral and extramural research under one management, sought to eliminate tooth decay as a major health problem ... **Thomas J. Cook**, chief of the Grounds Maintenance and Landscaping Branch, DES, has retired after 31 years at NIH. Many physical changes have occurred during these years at NIH, but he still calls it a "landscaper's dream place." He plans to continue pursuing his hobby of building model airplanes and will continue working in landscaping and maintenance ... **Peg Fisher**, a patient care technician at NIH, retired from the Clinical Center nursing department on Apr. 30. Throughout her career at the CC she worked in many clinics with many patients and families. Her retirement plans include rest, gardening and traveling through the United States ... **Doug Jones** of the Audiovisual Program Developmental Branch, NLM, retired recently from government service. He joined the library in 1980 when NLM's photo department was being formed. He studied at the New York Institute of Photography and, before joining NLM, worked for the NCI Laboratory of Viral Carcinogenesis ... **Dr. James E. (Jim) Pierce, Jr.**, special assistant to the assistant director for operations, Division of Personnel Management, retired on Apr. 3 after 34 years of federal service. He arrived at NIH on Apr. 3, 1961, joining Dr. Baruch S. Blumberg, chief, Geographic Medicine and Genetics Branch, NIAMD. He later transferred to the Program on Mental Retardation in the newly created NICHD, where he performed duties related to enzymatic and chromosomal mappings. He left the scientific field in 1966 to become an NIH management intern and the rest of his career was devoted to personnel work ... **Arnold Sperling**, director of the Clinical Center's patient activities department, retired on Apr. 30. He joined the hospital as chief of the patient activities section in 1961 and, because of his innovations and accomplishments, the program was granted department status more than 20 years ago. When he retired he passed on the 'key' to the Clinical Center. The silver key mounted on a wooden plaque is held by the person who has been a CC department chief the longest. To whom he passed the key is a secret ... **Helen Stafford**, assistant director for operations, Division of Personnel Management, retired on June 30 after 21 years at NIH. She began working here May 31, 1970, when she signed on as a personnel management specialist. In 1973, she was selected as the personnel officer for NICHD, NEI, and DRR. In 1976, after receiving a departmental Superior Service Award for her performance in this three-unit

assignment, she was promoted to her present position. She has served on many NIH-wide search committees and she was described as "one of the great stalwarts of NIH and its people" by former NIH director Donald Fredrickson.

DEATHS

Rose Marie Almasy died on Apr. 3. She began her career at NIH in 1951 and worked as a receptionist and then in the Office of Special Events—all at the Clinical Center. She retired in 1977 ... **Evelyn Attix**, former executive officer at NHLBI, died May 5 of a cerebral hemorrhage. She was stricken at her home in Washington, D.C. She began her career in the NHI in the early fifties. She started as a GS-2 clerk and in 1975 was appointed executive officer, thus becoming one of the highest ranking women at NIH. She retired in 1984 ... **Daniel Carangi**, graphics director at NLM, died Mar. 23 at a health care center in La Crosse, Wis. He had been with the library for 23 years before retiring in 1989 ... **Mabelle W. Fletcher**, 71, who had been an administrative assistant at NIH, died of cardiac arrest June 11 at her home in Gaithersburg ... **Dr. James Q. Gant, Jr.**, 83, died of a heart attack on Sept. 2, 1989, at Sibley Memorial Hospital. He was a retired physician who had served as the first dermatologist with the Food and Drug Administration and came to NIH in 1941 in the Industrial Hygiene Research and Investigation division. After leaving the PHS he practiced and taught in Washington specializing in dermatology. He was an amateur astronomer and in 1954, the lunar crater Archimedes was renamed "Gant" by the lunar section of the British Astronomical Association. He was buried at Quantico National Cemetery with full military honors ... **Gloria Grauman**, a grants technical assistant in the NIGMS Office of Program Activities who retired in July 1989, died of cardiac arrest Feb. 16 in Wheaton. She spent 14 years with the federal government, the last 12 in NIGMS ... **Dr. Jonathan L. Hartwell**, a retired research chemist at NCI, died of pneumonia Mar. 22 in Bethesda. He retired in 1975 as head of the natural products section in NCI's Drug Development Branch. He had worked at NCI for nearly 40 years and he had also served as chief of NCI's research communications branch. He was the author of many articles and books on the effects of extracts and compounds of natural origin for use in chemotherapy ... **Dr. Herman Moritz Kalckar**, 83, professor emeritus of biological

chemistry at Harvard Medical School, died of pneumonia on May 17 in Cambridge, Mass. He did pioneering work on metabolism and was a visiting scientist at NIAMD and later a professor of biology at Johns Hopkins University. In 1961 he was named head of the biochemistry research laboratory at Massachusetts General Hospital and a professor at Harvard Medical School. He was a member of the Board of Contributing Editors for *NIHAA Update* ... **Dr. Toichiro Kuwabara**, 71, a retired NEI scientist, died Apr. 2 at his home in Indianapolis of apparent heart failure. In 1971 he joined NEI as chief of the Laboratory of Ophthalmic Pathology. While at NIH he extended his interests and provided important contributions in several areas, most notably ocular development, senile cataract, cornea wound healing, diabetic retinopathy, and experimental uveitis. He retired from NEI in 1989 to become professor of ophthalmology and pathology at the University of Indiana School of Medicine, where he worked until his death ... **Dr. Ernest V. deMoss**, 69, a surgeon with NCI, died of a heart ailment May 21 at a hospital in Plano, Tex., where he was visiting relatives. He had worked at NCI since 1973 ... **Dr. Peter Dean Olch**, 61, a retired deputy director of the History of Medicine Division, NLM, died of a pulmonary embolism Apr. 26 at Suburban Hospital. He had been ill with cancer and was stricken at his home. A trained surgeon and pathologist, he was an authority on the history of surgery and the history of medicine on the American frontier ... **Richard L. Pierson**, who retired from NIH in 1985 after 26 years of service in the Veterinary Resources Branch, DRS (now part of the National Center for Research Resources), died Apr. 14 at his Bethesda home. He overcame disability caused by severe wounds received in World War II and came to work at NIH in the late 1950's as an animal husbandman. He performed ably and took increasingly responsible positions in VRB, including 10 years as assistant chief of the animal production section and 10 years as chief of the ordering and contract unit of the small animal section ... **Dr. Anthony A. Rizzo**, 62, a periodontist and science administrator with NIDR, died suddenly of a heart attack Apr. 20 in Mexico while attending a meeting. He was chief of the Periodontal and Soft Tissue Diseases Research Branch, NIDR. He had been with the

institute since 1957, holding a broad range of positions in both intramural and extramural programs. He was a 33-year member of the PHS until he retired from the Commissioned Corps in December 1990 ... **Dr. Barrett Scoville**, 55, a pharmaceutical executive, psychiatrist and professor who was a former FDA official, died Apr. 7 after his single-engine plane crashed after takeoff from Great Barrington (Mass.) airport. He had joined NIH in 1979 as a drug development expert in the Epilepsy Branch of the Neurological Drug Disorders Program. He went to work for Otsuka American Pharmaceuticals of Rockville and at the time of his death was vice president for clinical development ... **Dr. Sidney Silverman**, 75, died May 7 at the Washington Hospital Center. He worked as a bacteriologist at Ft. Detrick in Frederick and after the laboratories there were closed, joined NCI. In 1979 he became a professor of biology at Hood College, where he stayed until his retirement in 1989. At the time of his death he was working on a history of the college for its centennial celebration in 1993 ... **Dr. Katherine Suydam Brehme Warren**, 82, a retired grants official at NIH and a former professor of biology at Adelphi and Hofstra universities in New York, died of respiratory ailments Mar. 23 in Laurel. She moved to the Washington area in 1961 and joined NIH. She reviewed research grants in the field of cell biology and later in cooperative clinical projects. She retired in 1971.

Memorial Contributions

The NIH Alumni Association recently received contributions in memory of Dr. John R. Heller and Dr. Jonathan L. Hartwell given by Mrs. Onie (Powers) Adams. Contributions in memory of Dr. John R. Heller and Mrs. Rose Marie Almasy were given by Mrs. Mary Calley Hartman. We have established the NIHAA Memorial Fund; the board of directors will decide on an appropriate use.

Book Briefs

Recent Books of Interest To Alumni Members

Robert Gallo. *Virus Hunting: AIDS, Cancer, and the Human Retrovirus: A Story of Scientific Discovery*. New York: A New Republic Book, Basic Books, 1991. 352 pp.; index; illus.; \$22.95.

Dr. Robert C. Gallo, chief of NCI's Laboratory of Tumor Cell Biology, presents in this book his view of the discovery of HIV, the retrovirus that causes AIDS. The discoverer of the first cancer-causing retrovirus and two-time Lasker award winner explores not only his own work and the controversy surrounding AIDS research, but also the nature of proof in scientific discourse, the competition between laboratories and institutes, life at NIH, and the recent politicization of biomedical science.

Victoria A. Harden and Guenter B. Risse, eds. *AIDS and the Historian: Proceedings of a Conference at the National Institutes of Health, 20-21 March 1989*. Washington, DC: U.S. Department of Health and Human Services, NIH Publication No. 91-1584, 1991. 161 pp. illus. No charge.

This book contains the proceedings of a conference at which historians, scientists, physicians, AIDS activists, museum curators, archivists, and others discussed how historical perspective could contribute to public discussion of AIDS. The conference was sponsored by NHBLLI, NIDR, NLM, the DeWitt Stetten, Jr. Museum of Medical Research, and the University of California, San Francisco. Copies of the proceedings may be obtained at no charge by writing the NIH Historical Office, Bldg. 31 Rm. 2B09.

NIH Retrospectives



SUMMER 1951

President Harry S. Truman laid the cornerstone of NIH's Clinical Center on June 22. Items placed in the cornerstone included a list of all NIH employees, Senate and House hearings on the Clinical Center, and copies of speeches delivered at the ceremony. Photographs were included of the Clinical Center in various stages of construction. Symbols of advances in clinical medicine also placed in the cornerstone were cortisone, penicillin, and blood plasma to represent therapeutic treatment; a radioactive isotope and photofluorographic x-rays to represent diagnostic aids; and vaccines and sera representing preventive measures ... Dr. George W. Beadle, geneticist and Chairman of the Biology Division, California Institute of Technology, has been awarded the first R. E. Dyer Lectureship. His talk delivered June 21 was on "Genetic Control of Metabolism."



SUMMER 1961

On May 26 DHEW Secretary Abraham A. Ribicoff dedicated the \$4 million National Institute of Dental Research building ... In the Labor-HEW appropriations bill passed by the House, NIH would receive an operating appropriation of \$641 million for the fiscal year 1962. This compares with the President's budget request of \$583 million and last year's final appropriation of \$560 million ... NIH scientists, Drs. James Watt and Andrew G. Morrow, re-

cently returned to Bethesda after a two-week trip to Russia as members of a United States delegation of cardiologists and surgeons. The group was in the Soviet Union under a 1960-61 agreement between the two countries for cooperation in exchanges in the scientific, technical, educational and cultural fields.



SUMMER 1971

Dr. Rolla E. Dyer, NIH Director from Feb. 1, 1942, to Sept. 30, 1950, died June 2 of a heart attack at his home in Atlanta, Ga. In a tribute to him Dr. Robert Q. Marston, current NIH Director, wrote "He was precisely the right man at the right time. He laid the groundwork for what was to become this Nation's—and the world's—foremost biomedical research institution."



The mystery photo in the last issue of *Update* was taken at the first NIH Hamster's theatrical production. Both Phil Janus and Jane Sundelof Jones were the first to correctly identify that photo. Above is another photo about which National Library of Medicine prints and photographs curator Lucinda Keister needs help. We believe this may be a photo of Dr. G. Robert Coatney's malaria research laboratory. Is this correct? Does anyone know the names of the two women in the picture and their position in the laboratory? Please send information to *Update*.

The NIH Record

U.S. Department
of Health,
Education, and
Welfare

September 18
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National
Institute of
Health

SUMMER 1981

The National Institute of Arthritis, Metabolic, and Digestive Diseases was renamed the National Institute of Arthritis, Diabetes, and Digestive and Kidney diseases (NIADDK) on June 23 ... On June 30 Dr. Donald S. Fredrickson announced that he was stepping down as NIH Director. In his statement he said: "This July I am completing my fourth 7-year term at NIH. It seems as exhilarating and worthwhile as in the summer of 1953, when I arrived. This last 6 years, however, have been spent in the relentless company of the administrative burdens of the Director. It is time to shed them for a while, lest I forget completely how to be a scientist and a physician." Dr. Thomas E. Malone, Deputy Director, has been named Acting Director of NIH.

Attention

NIHAA wants to hear from its members. Please type or print your note for a future issue and mail it to *Update*.

Name _____

Home address _____

Home phone _____

News, including dates/position at NIH and photo if possible.

Chapter (continued from p. 25)

nual Alpha Omega Alpha/Minority Student Day. Thus, the aforementioned program was quickly followed by a stirring AOA address by DHHS secretary Dr. Louis Sullivan. After his talk, all adjourned to the Birmingham Civic Center for a reception and a gala dinner. The after-dinner speeches allowed Rall and Kennedy each to make yet another comment on the utility of a strong alumni association.

The next morning, Pittman gave the visitors a tour of the UAB medical campus and delivered them to the airport for their return flight.

A number of alumni have, from time to time, expressed interest in having a chapter of the NIHAA in their area. The national office would welcome any offers from alumni to undertake organizational efforts along these lines and would be pleased to provide as much assistance as possible. Write or call the NIHAA office, 9101 Old Georgetown Rd., Bethesda, MD 20814 (301) 530-0567, or Tom Kennedy (301) 942-3122.



Among those attending the first meeting of the NIHAA chapter in Birmingham on Apr. 5 were (from l) Dr. Thomas Kennedy, Jr., NIHAA; Dr. James A. Pittman, Jr., dean, University of Alabama School of Medicine; Dr. J. Edward Rall, former NIH deputy director for intramural research.



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NIHAA UPDATE

**If You Are Not Yet A
Member Of The NIHAA
[Clip and mail]**

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9101 Old Georgetown Rd.
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I would like to apply for membership in the NIH Alumni Association. My former NIH position was:

(Title)	(Organization)
from _____ to _____ My membership dues of \$ _____	
(Years)	

are enclosed payable to FAES/NIHAA.

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Full Name: _____

Title: _____

Place of Employment if applicable: _____

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You have received a dues renewal notice from NIHAA. Please return it promptly. Dues are an important source of our income and we need your continued support.

Memberships

Please indicate membership desired:

Type	Annual Dues
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<input type="checkbox"/> Associate (for present NIH employees)	\$ 25.00
<input type="checkbox"/> Life	\$250.00

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Please indicate amount here

\$ _____

NIH Alumni are people who have worked or studied at NIH.
Present NIH staff are invited to join as associate members.

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NIHAA Update

A Tradition Continues

Fifth NIH Research Festival Fosters Reunions, Fresh Outlook

By Carla Garnett

Despite the first saturating rain all summer, NIH's 4-day, fifth annual Research Festival played to packed arenas—including Masur Auditorium, Lipsett Amphitheater, Wilson Hall, two tents and various meeting rooms—all over campus. Standing-room-only symposia and well-attended workshops combined to make the 1991 festival a fitting tribute to the 5-year tradition. Nearly 500 posters—a record—were submitted for presentation, necessitating for the first time a third poster session.

NEI director and acting NIH deputy director for intramural research Dr. Carl Kupfer opened this year's festival by reminiscing about the first Research Day, Sept. 25, 1986, when, he said, "A tradition began. Amid a festival-like atmosphere, NIH's intramural research programs presented a small fraction of the

(See *Festival* p. 8)



NHLBI director Dr. Claude Lenfant (l) presents the 1991 Distinguished Alumnus Award to Dr. Joseph L. Goldstein, a Nobel laureate who worked at NIH from 1968 to 1970.

Revitalization Seen

'Town Meeting' Airs Intramural Concerns

By Rich McManus

NIH director Dr. Bernadine Healy held a 2-hour "town meeting" Sept. 20 in Masur Auditorium at which she fielded questions from intramural NIH and ADAMHA scientists and announced her intention to revitalize the "jewel in the crown of NIH" as part of her overall strategic plan for the NIH. She also lent a ringing endorsement to the idea of a graduate university at NIH and envisioned a whole new "NIH North" campus as a possible answer to the problems of overcrowded labs, insufficient parking, and decrepit infrastructure.

(See *Town Meeting* p. 18)

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Fiftieth Anniversary of NIH's Move Celebrated

On Saturday, Nov. 23, the NIHAA and the NIH Historical Office/DeWitt Stetten, Jr. Museum of Medical Research will sponsor a seminar and reception commemorating the 50th anniversary of the full occupation of the NIH campus in Bethesda in 1941. Complementing the fall event will be an exhibit entitled "Seventy Acres of Science," sponsored by the Stetten Museum and mounted in the NIH Clinical Center, Bldg. 10.

The seminar will be preceded by a reception from 2 until 3 p.m. at the Mary Woodard Lasker Center, Bldg. 60, at NIH. Speakers at the seminar, which will begin at 3 p.m., are alumni who participated in the move to the Bethesda cam-

(See *Anniversary* p. 2)

Anniversary (continued from p. 1)

pus: Dr. Leon Jacobs (parasitic diseases), Dr. Margaret Pittman (microbiology and biologics control), Dr. Harold Stewart (cancer pathology), Dr. Joseph Leiter (carcinogenesis and chemotherapy), and Dr. Lewis Sargent (chemistry).

A videotape, prepared by the National Library of Medicine, of President Franklin D. Roosevelt's dedication of the new campus in 1940 will also be shown. Rep. Constance A. Morella of Maryland's 8th District will present opening remarks. Dr. Carl Kupfer, NEI director and acting NIH deputy director for intramural research, will end the program with observations about "NIH Today and Tomorrow."

Copies of the exhibit brochure, which will provide a short history of the transition to Bethesda, will be distributed to those who attend. The winter 1992 *NIHAA Update* will publish excerpts from the seminar and recollections of other alumni across the country who were at NIH during this period.

With its move to the Bethesda campus from the old NIH campus at 25th and E Streets, N.W. in Washington, D.C., NIH crossed an important threshold. A new commitment to basic medical research was displacing the traditional focus on epidemic control and sanitary engineering. Civilian scientists were supplanting the military traditions of the Public Health Service with the work styles of academic science.

By the early 1930's, the old campus was filled to capacity. Acute space limitations curtailed experimental activities, and crowded animal holding areas posed disease dangers for both animals and staff. Surgeon General Hugh S. Cumming thus launched a search for an animal farm outside the District of Columbia.

In 1934, however, Luke I. Wilson offered his Bethesda estate to the Secretary of the Treasury, who had jurisdiction over the PHS. Aware of the NIH search for an animal farm, the secretary ac-

cepted the Wilson donation. Dr. Lewis R. Thompson, director of the PHS Division of Scientific Research, realized that the 45-acre tract provided an opportunity to rebuild the entire NIH. When monies from the 1935 Social Security Act also provided a means to expand the NIH staff, Thompson's plans were put into effect. In 1937, shortly after Luke Wilson died from cancer, his widow Helen donated an additional 25 acres, raising the total acreage, as the PHS described it, to "70 acres of science."

Construction and occupation of the first six buildings proceeded quickly. By Dec. 1, 1938, the NIH's administrative staff and library had moved into Bldg. 1, while the Divisions of Industrial Hygiene and Public Health Methods established themselves in Bldgs. 2 and 3. The following October, the National Cancer Institute began operating out of Bldg. 6, and two months later, fourteen officers' quarters were occupied. In July 1940 the Divisions of Biologics Control and Infectious Diseases began moving into Bldg. 5 and the Divisions of Chemistry, Pharmacol-

ogy, and Zoology into Bldg. 4. By May 1941 all laboratory equipment for these research buildings was in place, and the buildings were completely utilized.

The term "reservation," which is used to refer to the Bethesda campus, has a long history. When Pierre L'Enfant drew up his plan for Washington, D.C., he designated that certain areas were "reserved" for the use of the federal government. The area at 25th and E was "Reservation #4," shortened to "the reservation" by NIH personnel. The term, like the campus, moved to Bethesda.

On Oct. 31, 1940, as the United States carefully monitored the war in Europe, President Roosevelt motored to Bethesda to dedicate the new campus. In his address, the president recalled that NIH had always been devoted to "furthering the health of all mankind." Its new mission, he declared, must be to "recruit... knowledge and science in the service of national strength."

For more information call Harriet Greenwald at (301) 530-0567.



The planning committee for the Nov. 23 meeting includes (seated, from l) Dr. Margaret Pittman, Dr. Harold L. Stewart; (standing, from l) Dr. Joseph Leiter, Harriet Greenwald, Dr. Leon Jacobs, Dr. Lewis J. Sargent, Dr. Victoria A. Harden, and Dr. James T. Duff.

Update

The NIHAA Update is the newsletter of the NIH Alumni Association. The NIHAA office is at 9101 Old Georgetown Rd., Bethesda, MD 20814, (301) 530-0567.

Editor's Note

The NIHAA Update welcomes letters and news from readers. We wish not only to bring alumni news about NIH, but also to serve as a means for reporting information about alumni—their concerns, information on recent appointments, honors, books published and other developments of interest to their colleagues. If you have news about yourself or about other alumni, or comments on and suggestions for the NIHAA Update, please drop a note to the editor. We reserve the right to edit materials.

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From Black List to White House

Elvin Kabat Wins National Medal of Science

By Rich McMannis

Among the 20 winners of the National Medal of Science who gathered recently at the Rose Garden to receive their awards from President Bush, perhaps none relished the honor more than Dr. Elvin Kabat, a distinguished immunologist who, for the past 16 years, has split his professional time between NIH and Columbia University, where he is emeritus professor of microbiology.

"I sort of felt vindicated," laughed Kabat, who is known, scientifically, for his pioneering basic research on the nature and function of the immune system.

A reason for the unusual pleasure he took in receiving a federal award, he said, stems from his having been blacklisted during the McCarthy era as a suspected communist sympathizer and his rejection, for a time, of all PHS grant money.

A few caveats are in order: First, prior to washing his hands of PHS funding, Kabat had seen his grant for studying allergic encephalomyelitis in a colony of about 40 monkeys cancelled by PHS. To protest that action, he rejected future funding for a while. He was also accused of undermining national security by publishing a paper on biological warfare after World War II. Second, although he had to sacrifice the monkey colony in order to obtain autopsy results, Kabat's research in other areas continued to flourish due to generous funding from the Office of Naval Research and the National Science Foundation.

"They supported me when PHS would not," he recalls. "I had the biggest grant in molecular biology for many years. For a while, I received 8.5 percent of all the federal money committed to molecular biology."

Ironically, another winner of this year's National Medal of Science, the late Dr. Salvatore Luria, was also unfunded by PHS during a time when his

political leanings were suspect. A further irony: one of Kabat's three sons obtained his Ph.D. with Luria.

"Perhaps the friendship that has developed between Bush and Gorbachev explains this rebirth in terms of recognition," Kabat chuckles today.

If Kabat belongs on any list at all, it would probably be for hard work and stamina, not to mention scientific rigor and excellence.

"I'm a machine for work," he casually confesses.

Since 1975, he has hewn to a taxing schedule of teaching, research and writing, shuttling between New York City, where he has taught at Columbia since 1941, and NIH, where he has worked 2 days a week since a Fogarty scholarship year in 1974-75.

The Fogarty year was spent revising one of two "Bibles" Kabat has written. The first one was *Experimental Immunology*, on which he collaborated with Manfred Mayer at Columbia. First published in 1948, it set forth the basic rules for measuring antibodies, antigens, and complement. Revised in 1958, it went through four large printings ending in 1968.

The second bible was *Structural Concepts in Immunology and Immunology*, which was first published in 1968 and included the more sophisticated science and technology that had developed since his first book. It was the second edition of this opus that occupied Kabat during his Fogarty year; advice regarding the book came from NIH's Gilbert Ashwell, David Davies, William Raub, Henry Metzger, William Paul and Michael Potter.

During his Bethesda sojourns, Kabat resides on campus in Bldg. 20, across from the Clinical Center. Early on Mon-

(See Kabat p. 4)

Kabat (continued from p. 3)

day and Tuesday mornings, he occupies an office on the first floor of Bldg. 8, where he is dwarfed by stacks of paper that will eventually compose the sixth edition of *Sequences of Proteins of Immunological Interest*.

"The fifth edition is more than 2,700 pages long," he notes, "and future volumes may be triple the size. It's a damn nuisance to carry even pieces of it from New York to Bethesda."

By about 9 a.m. he leaves for the National Center for Biotechnology Information in NLM's Bldg. 38A, where he works until early afternoon. NLM is the publisher of *Sequences*, a tome that is growing so fast that it must eventually be "published" on optical disk rather than paper.

"One is always behind," Kabat laments, searching through papers at his desk on a recent Monday.

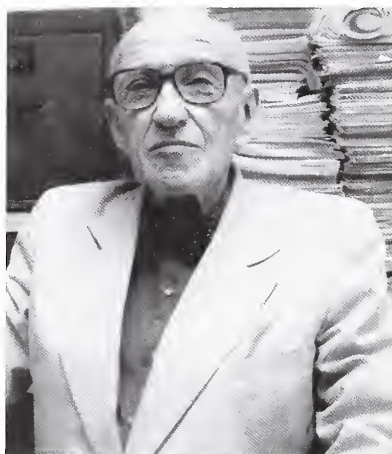
At Columbia, the 77-year-old scientist supervises the Ph.D. work of two graduate students and holds what he believes is the only Saturday morning seminar in American academia.

"We meet from 8 to 11 a.m.," he said. "It's sort of a journal club type of thing. Each member has to report on three articles. I call attention to interesting things I've heard about, or things that are in press that the students' wouldn't have seen."

On Sept. 24, Kabat left the United States for a 4-month sabbatical at the Pasteur Institute in Paris.

"I'm going to study some interesting crossreactive antibodies, and to keep in touch with people," he said. "I like to talk to people."

Kabat spent two sabbatical years in France, first in 1959, then in 1966. Preparing for his first visit, he studied intermediate French at Columbia so that he could deliver lectures. He had trouble, however, keeping the gender of French nouns in mind.



Dr. Elvin Kabat, who recently won the National Medal of Science, thinks he is probably "the most intensely studied human with respect to antibody formation to a variety of things."

"My principle was, if you used the masculine once and the feminine once, you were right once.

"I always speak extemporaneously—I never use notes," he continues. "However I once wrote some notes in French for my first lecture. The problem was, when the lights went down for my slide presentation, I couldn't see them. Afterwards I was told that I gave a very nice lecture, but that I referred to myself continually in the feminine."

Kabat was born in New York City and was exposed to science at age 5 or 6.

"One of the boys in the house (apartment) got a chemical set," he recalls. "He invited me to see some experiments. I also had a cousin who was a physician. He was a role model for me."

Kabat had wanted to be a physician too, but the Depression put that choice out of reach.

"My father was trying to feed and house a family of four on \$5 a week," he remembers. "I got a job in the laboratory of Michael Heidelberger at Columbia, paying \$90 a month. I used part of my salary to help with the rent."

Kabat was Heidelberger's first graduate student and Ph.D. recipient, eventually becoming imbued with his mentor's brilliance and longevity.

"I have a good role model in Michael Heidelberger," he declares. "He was in the laboratory until a few weeks before his death at age 103."

Kabat asserts that he will work "until I drop." Asked whether he would pursue a research career again, he says, completely offhand, "Yeah, sure. I wouldn't think of doing anything else but what I did. I'm very satisfied with my career."

Years ago, Kabat was in the habit of making himself the normal volunteer for a wide variety of experiments, a practice that is now largely outlawed.

"I injected myself with a whole lot of polysaccharides," he recalls. "It's illegal now (as unauthorized human subject research). You couldn't do it at NIH today."

"If you want to be a good immunologist, you should be a good antibody-former," he says with another laugh. "I have used gallons of my serum in experiments. I gave my graduate students (of whom there have been about 20 over the years, and many postdocs including some now at NIH) several gallons of it. I don't do that now, though."

Kabat has personally traced the persistence of two antibodies in his blood for the past 25 years.

"I can trace them back to samples going back to the 1950's," he says. "I'm probably the most intensively studied human with respect to antibody formation to a variety of things."

Though he has lately noticed a cancer protein in his blood and is taking chemotherapy for it, Kabat says he's healthy.

"I feel great. I like to work. I don't do much else. If I retire, what will I do until anybody wakes up?," he asks, referring to his habits as an early-riser.

Considering biomedical science from his perch as expert in the office of the NIH director, Kabat sees a "very unfortunate" climate beclouded by accusations

of wrongdoing.

"One doesn't know how to handle these things," he mused, then sharpened, "I think the universities have been lax in dealing with fraud and misconduct. Some of the early efforts were just white-washes. There's a lot to be done about arriving at a due process approach."

He continued, "I'm worried about young people being discouraged from going into science by all this business of fraud—or alleged fraud. That's a trend that has to be reversed."

Kabat insists that senior scientists must be closer to the work they supervise.

"I look at all my students' notebooks every week to see what they've done the previous week," he said. "We also meet to discuss aspects of the work. That's one advantage of not running a very big laboratory."

At the peak of his investigations, Kabat had about 10 colleagues in his lab. Any more than that would be suboptimal, he suggests.

By and large, Kabat sees the scientific establishment flourishing, though "it could use more money. There's a lot of economic competition in terms of what people go into. Of course science salaries are much more competitive than they were in my day."

Kabat's National Medal of Science is but one of the honors he has accumulated during a life in biomedicine. A member of the National Academy of Sciences since 1966, he has won the Eli Lilly Award in bacteriology and immunology, the Karl Landsteiner Memorial Award, the City of Hope Annual Research Award, the R.E. Dyer lectureship, and the Dickson Prize in medicine from the University of Pittsburgh.

Two years ago, Kabat was made an honorary member of the Japanese Electrophoresis Society; the event marked both the 40th anniversary of the society and the 50th anniversary of a landmark paper Kabat published in the *Journal of*

Experimental Medicine.

Perhaps more valuable than these awards is the fine reputation Kabat enjoys among those he has mentored.

"Working in Dr. Kabat's laboratory provided the most comprehensive and rigorous type of research training possible in the area of immunochemistry as well as a unique opportunity for interactions with a truly outstanding scientist," commented Dr. John O. Cisar, a research microbiologist in NIDR's Laboratory of Microbial Ecology. "Dr. Kabat was always interested in looking at the latest experimental data and his perspective and insight on specific problems was nothing short of remarkable."

"Although being a graduate student in Elvin Kabat's laboratory was an extremely arduous experience, the training

his laboratory provided was truly invaluable," said Dr. Rose Mage, chief of the molecular immunogenetics section in NIAID's Laboratory of Immunology. "Elvin Kabat and his wife Sally maintain close contact with many of the 'graduates' of his laboratory and continue to be a positive factor in encouraging and fostering their careers. To this day, papers from my laboratory are written with the thought in the back of my mind that they must meet the exacting standards he expected from me when I was his student."

"I've got many friends, considering how tough I am on scientists," relates Kabat. "My associates used to joke that if you've been 'Kabatized' and survive, you can succeed anywhere."

Science, if not language, is clearly the richer for such a verb.

A Life in Science

Anyone interested in an account of Elvin Kabat's life in science may consult two autobiographical essays he wrote for the *Annual Review of Immunology*.

"My articles aren't like what you normally find in that publication," he observed.

The first, entitled "Getting Started 50 Years Ago—Experiences, Perspectives and Problems of the First 21 Years," appeared in 1983. The sequel, published in 1988, was titled simply "Before and After."

From the latter essay:

"One grew up in the 1910s and 1920s keenly aware of the role of infectious disease. I lost a brother who died of pneumonia at a few weeks of age in 1918; a cousin died of polio in the 1918 epidemic; my father was very sick in the influenza pandemic of 1917; a friend in our apartment house died of diphtheria, and many families lost a child or young relative. Epidemics of whooping cough, chicken pox, scarlet fever, measles, and diphtheria were frequent. When the Schick test and immunization with diphtheria toxin-antitoxin were first introduced in New York City Schools in 1924, I was Schick negative, an early indication of my potentiality as an antibody former.

"My parents were very devoted to me and to my sister Harriet, born May 8, 1920. I had everything I wanted for the first 12 years of my life. My mother tended to be somewhat overprotective. At the age of 10 or 11 I went to a school on 117th Street, and had to cross Lenox and St. Nicholas Avenues on the way. She wanted to accompany me, but I absolutely refused. She then followed me at some discrete distance. When I turned around and saw her, I laid down in the middle of the road and motioned to her to go back before I would stand up."

Life in the Andes and Chronic Mountain Sickness

By Dr. Carlos Monge

(Editor's note: Dr. Carlos Monge, a member of the NIHAA Board of Contributing Editors, has sent the following short essay. Dr. Harvey Klein, chief of the department of transfusion medicine, Clinical Center, has provided a brief introduction. He worked with Monge in the summer of 1980 when a group of NIH and other scientists went to the Peruvian Andes to study people with chronic mountain sickness.)

Dr. Klein writes: "The disease is indeed named for his father who published the first description. Monge has spent much of his scientific life trying to unravel the physiology of adaptation and excessive polycythemia at high altitude. He has said often that North Americans think of geography as north-south and east-west, while Peruvians think 'up and down' as well. High altitude excessive polycythemia has a substantial economic and health impact in Peru — often the government does not support high altitude natives who move to sea level, despite the obvious health problems they will suffer if they continue to live on the high plateau. NIH had two collaborative studies with Monge during 1979-80. The principal investigators were Dr. Robert Winslow, NHLBI (now at Letterman in San Francisco) and Carlos Monge. There was a substantial cast of characters from the U.S. and from Peru. I was fortunate to be a minor player on one of these expeditions to the Andes. The results of these studies added some basic physiologic information to the concepts of blood viscosity, cardiac output, phlebotomy, and excessive polycythemia. The studies were cut short both by Winslow's departure from NHLBI and from the un-

stable political climate in the mountains of Peru. This essay from Dr. Monge brings us up to date on his work."

Chronic mountain sickness with excessive polycythemia or Monge's disease was first described in 1925 by my father, who considered this clinical entity as a loss of adaptation to high altitude. Natives of the high Andes or long-term residents can be affected by this condition in which the red cell mass rises to such a degree that headache, malaise, and vascular occlusive disease become serious medical problems. Since this first description, there has been continuous research on acclimatization, adaptation and loss of adaptation to the hypoxic Andean atmosphere in man and animals carried out by many investigators from Peru and from other countries. Our group at the Cayetano Heredia University in Lima has approached this problem using the fields of evolutionary biology, comparative physiology and epidemiology in an effort to integrate fundamental biological knowledge into the problems of public health of the Andean populations. I will give a few examples of results obtained in the course of this integrative effort.

At the celebration of the American Physiological Society Centennial, I presented experimental results demonstrating that the air cell of eggs from Andean birds nesting in the high mountains had partial pressures of O_2 and CO_2 similar to the alveolar air of humans living at similar altitudes. Since bird embryos are oxygenated by diffusion through the egg-shell, this finding suggests that in the course of evolution, diffusion preceded pulmonary ventilation in setting the O_2 and CO_2 concentration values of the corresponding respiratory organs both at sea level and at high altitude. The ventilatory function of birds and mammals is considered a critical high-altitude adaptive parameter. Its failure as age increases is considered responsible for the excessive



Dr. Carlos Monge is professor of physiology, Universidad Peruana Cayetano Heredia, Lima, Peru.

polycythemia of chronic mountain sickness. These observations suggest the need to integrate diffusion into the pathology of chronic mountain sickness.

We have recently discovered that groups of chickens from the Andean plateau close to Lake Titicaca have hemoglobins with high affinity for oxygen and that this characteristic is transmitted to their descendants at sea level. This hemoglobin property is typical of high-altitude native animals like the South American camelids, the bar-headed goose of the Himalayas and other mammals and birds. Since chickens were introduced in South America during the Spanish conquest, our observation indicates that a high-affinity hemoglobin can be selected in an extremely short evolutionary time. This forces us to reinterpret our ideas about the evolutionary animal adaptation to the high Andes, including human adaptation.

In contrast to animals genetically adapted to high altitude, humans native to the Andes do not have high hemoglobin-oxygen affinity. They have a sea-level physiological design, and therefore, they are not truly adapted. Our epidemiological studies have shown that their hemoglobin concentration increases with age. These and other observations have led us to conclude that excessive polycythemia, which results in chronic mountain sickness, is indicative of the limited capacity of humans to tolerate high altitude as age advances and that chronic mountain sickness is not a disease of the individual but of the population.

Currently we are making an effort to persuade the health authorities of Peru to revise the working contracts of our high-altitude miners taking into consideration the health tribute they have to pay for contributing to more than 50 percent of our national budget.

We are happy to see that much of the basic knowledge accumulated through the years can now be applied to solve problems of public health of the Andean high-altitude natives. As often happens in biology, without mutation (new knowledge) there is no evolution and without natural selection (applied science) there is no evolutionary advance.

A peaceful year in Bethesda as a Fogarty Scholar offered me an opportunity to organize my mind in relation to high altitude physiology and medicine and for this opportunity I am most grateful to NIH.

If you did not receive issues of *NIHAA Update* and would like a copy, please notify the editor at 9101 Old Georgetown Rd., Bethesda, MD 20814.



Dr. Monge (r, foreground) explains an experiment to a volunteer from the native population of Cerro de Pasco, Peru, while medical technologist Sandra Rosen (l) and Dr. Harvey Klein, then the assistant chief of the CC Blood Bank, supervise. The photographs on this page were taken in 1980 when NIH scientists went to the Peruvian Andes to work with Dr. Monge.



Dr. Monge checks blood pressure of a woman who came in for treatment.



Dr. Monge conducts a pulmonary function test.

Festival (continued from p. 1)

outstanding research projects at a 1-day intellectual feast of symposia, posters and workshops."

"We established NIH Research Day in 1986 in hopes of increasing contact and collaboration among scientists," explained Dr. Abner L. Notkins, director of NIDR's intramural research program and founder of Research Day. "The event has far exceeded our original expectations."

Five years later, a lot has changed—most changes demanded and determined by growth. Several institutes, centers and divisions did not exist back then.

In May 1986, NIADDK had just split, producing NIDDK and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, a 6-month-old infant institute. The Division of Research Resources and the Division of Research Services had 4 years before they would be united, gaining center status. The National Institute on Deafness and Other Communication Disorders was 2 years away, a mere sparkle in NINCDS's eye.

In 1986, more than 3,000 attended the Research Day poster session that was held in the Visitor Information Center in the Clinical Center. "The response by the intramural community to the first Research Day was overwhelming," Kupfer said of the fledgling event. "An estimated 5,000 people participated in the events with two symposia, 20 workshops and 95 posters."

This year the festival included four symposia, 33 workshops and an added poster session. For the second year in a row, two tents were needed to accommodate the largest number of presenters ever.

"The sheer size of the operation has made it difficult for investigators to know each other or the scope of the work of the intramural programs," said Kupfer, comparing the single bacteriological laboratory in Staten Island, N.Y., that was NIH in 1887 to the 63-building, 503-acre

Bethesda campus that is 1991's NIH. "In fact, many investigators in the same institute, indeed within the same building, have never met."

The annual Research Festival (the event achieved "festival" status last year with the addition of a 2-day "in-tent" technical equipment display sponsored by the Technical Sales Association) has become many things in its short life. For many NIH'ers and former NIH'ers, it is reunion time.

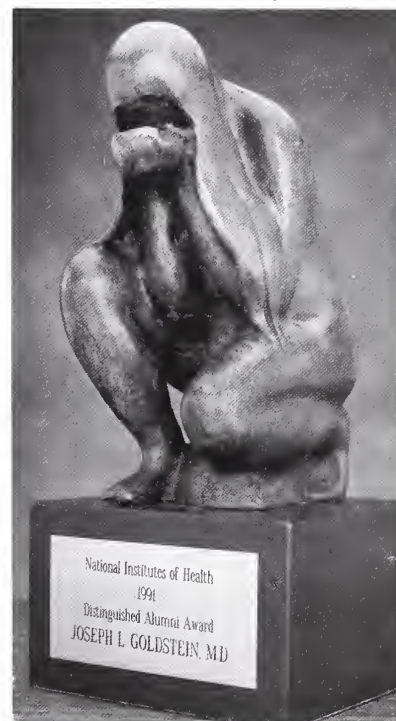
In another custom begun last year, the festival began with the NIH Alumni Symposium, a salute to selected former NIH researchers.

According to Kupfer, "NIH's individual intramural programs have trained approximately 50,000 doctoral scientists who have since joined the staffs of virtually all the world's medical research centers."

As Dr. Steven Paul, director of NIMH's intramural research program and chair of the 1991 festival organizing committee, observed, "The Alumni Day program was an impressive display of work from some of our most distinguished alumni, exemplifying how important and instrumental NIH has been in training the premier scientists in the country."

This year's alumni symposium, "Cholesterol: A Mystery Unraveled," and its accompanying Distinguished Alumnus Award, honored 1985 Nobel laureate Dr. Joseph L. Goldstein of the University of Texas Southwestern Medical School. In 1968, Goldstein came to NHLBI's Laboratory of Biochemical Genetics headed by Nobel laureate Dr. Marshall Nirenberg, who received the prize in physiology or medicine that year.

"Like most physicians in this stage in their career, I had very little previous research experience and my concept of what constitutes biological research was nebulous at best," Goldstein said, accepting the award from NHLBI director Dr. Claude Lenfant. "Although I was scien-



The NIH Distinguished Alumni Award is a replica of the statue "Healing Waters" by Azriel Awret, which is located near the escalator on the first floor of the Bldg. 10 clinic. It will be awarded each year to distinguished alumni of NIH.

tifically wet behind the ears, I still had an appetite for research that was ready for stimulation." Goldstein said two crucial events shaped his 2-year stint at NIH: One was Nirenberg's willingness to act as preceptor to a young physician/novice researcher in the Laboratory of Biochemical Genetics. "That opportunity," he recalled, "opened my eyes to the excitement of science and there I acquired scientific skills, learned the importance of originality and quality and style, experienced the thrill of discovery and first appreciated the power of the molecular approach to human disease."

The second breakthrough in Goldstein's NIH experience involved his

clinical work here, in the course of treating a pediatric patient of Dr. Donald Fredrickson (then National Heart Institute director and chief of the Molecular Diseases Branch). The 6-year-old girl had been diagnosed with what is now known as homozygous familial hypercholesterolemia (FHC), a genetic lipid disorder that makes heart attacks in childhood common among its young patients.

During this time, Goldstein began to work with an arthritis institute clinical associate, Dr. Michael Brown, to search for the genetic defect in FHC. In 1985, Goldstein and Brown, an original NIH collaboration, shared the Nobel Prize in Physiology or Medicine for their research on reduction of blood cholesterol, work Goldstein said was financially supported mainly by NHLBI.

"Believe it or not," Goldstein said, "after 23 years, we're still working together and we're having just as much fun in research now as we did in the early days. When I look back in my scientific development at NIH, it's the jewel in the crown of all the institutions that shaped my research career."

Featuring medical doctors from UCLA to Harvard to Washington University who had once done postdoctoral training in basic science at NIH, the alumni symposium filled the 500-seat Masur Auditorium.

"I am extremely pleased to be here," said Dr. Alfred Gilman of the University of Texas Health Science Center, a 7-year NIGMS grantee who trained at NIH from 1969 to 1971 and gave the first lecture of the symposium. "I'm particularly glad to have the opportunity to acknowledge my great debt to the heart institute, to the [NIGMS] pharmacology research associate program and particularly to Dr. Nirenberg in whose lab I worked."

Notkins emphasized that besides the enjoyment of gathering with former associates, the addition of alumni events has added an important new dimension to the

festival. "It links those of us who are here now with colleagues who were at NIH in the past," he said. "It provides a sense of history and continuity."

NIH'ers also see the festival as a sort of "premiere night" for science. Paul explained, "The research festival embodies the scientific vigor of NIH. The whole purpose is to have some very famous scientists interacting with our younger scientists and to establish many mutually beneficial collaborations."

The Division of Computer Research and Technology took full advantage of the forum presented by the festival. "The research festival gave us a wonderful opportunity to alert the NIH community to the new hardware, software and networking technologies that can contribute so much to the research enterprise," said DCRT director Dr. David Rodbard, whose division presented more than 20

posters.

"The poster session is a very important part of NIH Research Day," agreed Dr. Alan Schechter, chief of NIDDK's Laboratory of Chemical Biology and chair of Research Day '89. "It's where the most exciting collaborative science begins and where crucial one-on-one contacts are made."

One notable improvement in the way the festival was organized this year, Paul said, was the emphasis placed on encouraging and showcasing NIH's women scientists. "We tried to get a broader representation across campus," he said. "There are not that many senior women scientists at NIH. We tried to include more women in the sessions this year."

Dr. Monique Dubois-Dalcq, chief of NINDS's Laboratory of Viral and Molecular Pathogenesis and member of the festival organizing committee, applauded

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Participants in NHLBI Alumni Day symposium are (front row, from l), Dr. Philip Leder, Harvard Medical School; Dr. Alfred Gilman, University of Texas Health Science Center; Dr. Ronald Kaback, UCLA; and Dr. Joseph Goldstein, University of Texas Southwestern Medical School; (back row, from l) Dr. Claude Lenfant, NHLBI director; Dr. William Catterall, University of Washington Medical School; Dr. Philip Majerus, Washington University School of Medicine; and Dr. Edward Korn, director of intramural research, NHLBI.

(continued from p. 9)

the decision to encourage NIH's women scientists to participate and suggests that yearly reminders of the decision be handed down to posterity's festival planners.

"I think we're going to have to repeatedly reinforce it every year," she said, noting that the new planning strategy was the brainchild of a group of 20-25 senior women scientists at NIH, who had observed past festivals and found too few women researchers represented in symposia and workshops. The group then wrote a letter to the next year's festival organizing committee, asking that an effort be made to increase participation by women scientists of renown. The 1991 festival signaled NIH's response to the letter.

Dubois-Dalcq said the idea was a necessary first attempt at solving the problem and that it was met with an enthusiastic response by the committee. Although there are plenty of women who hold postdoctoral and staff fellow positions at NIH, she continued, there are much fewer in the section chief category and only a handful who are laboratory chiefs.

"I see the yearly NIH festival as an



This year's annual Research Festival represented NIH's increasing efforts to include more women in its research community and to highlight scientific work by women.

opportunity to increase the visibility of women who are independent investigators and often leading scientists in a particular field," Dubois-Dalcq said. "This year's organizing committee made an effort to have such women scientists—independent of their tenure status—organize or speak in workshops, which turned out to be very successful. There is still room for NIH to improve in this area, but this year's festival shows that we are indeed trying."

Dr. Ofelia Olivero, who has presented a poster every year since she came to NCI's Division of Cancer Etiology from Argentina in 1987, said the poster session has a unique function for NIH newcomers and veterans alike. "What it does is improve interaction among scientists," she said. "It is very hard to know what everyone is doing in a place this large."

Dr. Grace Ault, a staff fellow since June in NINDS's Laboratory of Experimental Neuropathy, concurred. "The poster sessions are the most helpful part of the festival. I've been able to meet a lot of people and really just explore."

Likewise, Bob Bare of the Laboratory of Comparative Carcinogenesis at NCI's Frederick Cancer Research and Development Center and a 24-year NIH veteran, was enjoying his first research festival. "You really get an idea of what projects other people are working on," he said, adding that, but for such an annual activity, some NIH'ers in Frederick and other remote NIH facilities could be completely isolated from the rest of the agency.

Another change that has been considered by festival planning officials is having the event every other year instead of annually. "Certainly there's a lot of repetition," acknowledged Paul, "but I like the idea of doing it every year."

Schechter agreed, "There's enough good science here to have something every year. It is a great deal of work, but the final product is worth every effort."

Paul said NIH'ers who have sugges-



Dr. Griffin Rodgers of NIDDK's Laboratory of Chemical Biology explains his poster on betathalassemia carriers at the first poster session of NIH's annual Research Festival.

tions or comments about the festival should send them to him; he will see that the remarks get into the hands of next year's committee. Regardless of the numerous evaluations and post-mortems to which the 1991 festival will doubtlessly be subjected, the tradition will thrive if its foundation is any indication.

"Despite the changes and expansions," Kupfer said, "the goals remain the same: to provide abundant opportunities for NIH scientists to interact with each other to discuss science with investigators they otherwise might not meet and to establish new collaborations."

"There is perhaps no other research institution or university in the world—indeed there are few national or international scientific meetings—that can present the breadth and depth of science we enjoy at the NIH Research Festival."

"It's a spiritual kind of thing," Paul concluded. "Besides being very stimulating scientifically, it's a fun way of celebrating science."

In 1992, Research Festival is scheduled for Sept. 21 and 22. The National Institute of Allergy and Infectious Diseases will honor its distinguished alumni. The National Heart, Lung, and Blood Institute will coordinate the workshops, poster sessions, and symposia for Research Festival '92.

News From and About NIHAA Members

Dr. Mark Bolander, senior staff fellow in the Laboratory of Developmental Biology, NIDR, and former chief of the Orthopedic Research Unit, NIAMS, is now a consultant in the department of orthopedic surgery at the Mayo Clinic. His wife Judy used to be a staff nurse in the Alcohol Rehabilitation Unit in the Clinical Center. He reports that they are now surrounded by corn fields, instead of concrete and asphalt, but they miss their friends in Bethesda. Judy is improving her golf game before the snow arrives and he is applying for research grants involved in fracture healing, clinical practice and surgery.

Dr. George P. Canellos, who was with NCI from 1963 to 1965 and then from 1967 to 1975, and is now chief of clinical oncology at the Dana-Farber Cancer Institute in Boston and W. A. Rosenberg professor of medicine, Harvard Medical School, was elected an honorary fellow in the Royal College of Physicians of Great Britain.

Dr. Paul J. Davis, who was a clinical associate and senior staff associate at the Gerontology Research Center, NICHD (now NIA), has left Buffalo, where he was chief of the medical service at the VA Medical Center and professor and vice-chairman, department of medicine, State University of New York at Buffalo School of Medicine and Biomedical Sciences. He has been named chief of medicine at Albany Medical College of Union University, Albany, N.Y.



Dr. Gideon Goldstein, a visiting scientist in the Laboratory of Immunology, NIAID, 1967-1968, is currently executive vice president and CEO of the Immunobiology Research Institute. Recently he was the co-recipient of the 1991 Discoverers Award, presented annually by the Pharmaceutical Manufacturers Association. He was cited for "developing the monoclonal antibody OKT3 ... which is widely used in organ transplant recipients for the treatment of acute rejection of kidney transplants." This research greatly improved the success rate of kidney transplants.

Dr. Joseph S. Handler, who was a section chief in the Laboratory of Kidney and Electrolyte Metabolism, NHLBI, from 1960 to 1989, writes that he is now professor of medicine and director of nephrology at Johns Hopkins University School of Medicine.

Dr. Chester J. Herman, a former NCI section chief in quantitative cytology from 1970 to 1979, is currently professor of pathology at Emory University School of Medicine, associate director of the Winship Cancer Center and director

of anatomic pathology at Grady Memorial Hospital in Atlanta, Ga.

Dr. Walter E. Heston, from 1940 to 1975 at NCI as chief of the Laboratory of Biology, writes that he was initially "employed as a NCI research fellow stationed at the Jackson Memorial Laboratory, Bar Harbor, Maine, from July 1, 1938, to June 1, 1940." He is now retired and living in Fort Myers, Fla.

James G. Hill retired on June 3, 1991, as chief, Office of Science Policy and Analysis, NICHD. He is currently the Director, Program Development, Science Directorate, American Psychological Association in Washington, D.C. He writes: "I would enjoy hearing from former colleagues on (202) 955-7653, especially in regard to moving forward the role of behavior scientists in health research, a topic of increasing importance in the light of the proposed reorganization which would bring the research from NIMH, NIDA, and NIAAA into the NIH family."

Dr. Ze Huang, who was a visiting fellow in the Developmental Endocrinology Branch, NICHD, has left NIH for the department of physiology in the School of Medicine at the University of Maryland and writes: "I spent a very precious time at NIH. I miss NIH all the time and I want to keep in touch."

Dr. Edwin M. Jacobs, who from 1976 to 1984 was the associate and acting chief of the Clinical Investigations Branch, DCT, NCI, since 1985 has been clinical professor of medicine at the University of California, San Francisco, and associate executive officer of the Northern California Oncology Group.

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Dr. Georgeanna (Seegar) Jones, who had a fellowship at NIH in 1938-39, is professor of obstetrics-gynecology at Eastern Virginia Medical School. With her husband Dr. Howard Jones of the Jones Institute for Reproductive Medicine in Norfolk, Va., she was quoted in the *Time* magazine of Sept. 30, 1991, in a cover story on "Curing Infertility." Her work with her husband produced the first in vitro fertilization baby in the United States.



Dr. Laurence J. Marton, a clinical associate at NCI's Baltimore Cancer Research Center from 1971 to 1973, when he shifted his training to clinical pathology, has recently been named dean of the University of Wisconsin Medical School. He will assume his duties next spring. He currently chairs, at the University of California, San Francisco, the department of laboratory medicine. A clinical pathologist, Marton conducts research within UCSF's Brain Tumor Research Center on biochemical mechanisms for brain cancer drug therapies.

Charles Miller II, who was in the Division of Financial Management, OD, from 1960 to 1967, and retired 2½ years ago as executive officer of the National Academy of Sciences Institute of Medicine, was profiled in the October 1991 issue of *Washingtonian* magazine. He has a second career as a volunteer working at a variety of activities ranging from nursing home ombudsman to teaching English to Indochinese refugees.

Dr. Paul Parkman, who was on campus from 1963 until his retirement in 1990 as director of the Food and Drug Administration's Center for Biologics Evaluation and Research, was honored in Canton, N.Y., on Sept. 28 as part of St. Lawrence University's 1991 Homecoming Weekend. He is a graduate of the school and he received the Sol Feinstone Alumni Award in recognition of his medical work, especially as the co-developer with Harry Meyer Jr., of the rubella vaccine.

Dr. Philip Y. Paterson, a scientist in the Laboratory of Immunology, NIAID, based at the NYU School of Medicine from 1957 to 1960, became chairman and professor emeritus of microbiology and neurobiology, Northwestern University, in September 1990 and moved to Eagle River, WI. He writes that he "is in transition, not retirement, writing fiction (short stories: a novel for middle graders in progress) and running, cross-country skiing, snowshoeing, back packing, canoeing, violin playing and reading yards of books that have waited decades for attention."

Barbara A. Rolling, a clinical nurse expert at the Clinical Center from 1968 to 1980, recently received the PHS Outstanding Service Medal for her "noteworthy and high quality contributions toward improving care for the elderly through important projects initiated to advance training and education in geriatric medicine."



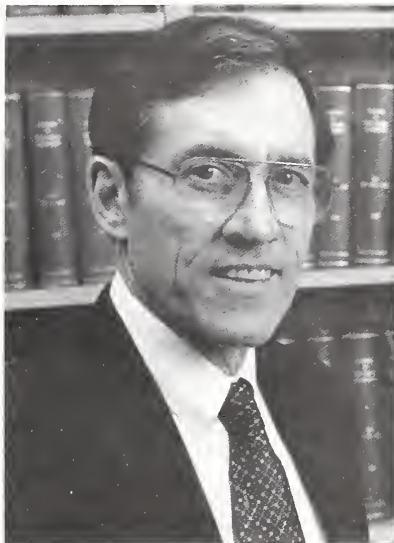
In an historic moment, three former NIH directors meet at the Sept. 22 NHLBI reception. They are (from l) Dr. Robert Q. Marston, Dr. James A. Shannon and Dr. Robert S. Stone.

cine and dentistry." Rolling is the project coordinator for the Grants for Faculty Training Projects in Geriatric Medicine and Dentistry program, which is funded by the Bureau of Health Professions, Health Resources and Services Administration.

Dr. Frank R. Sharp, who was an NIMH research associate from 1973 to 1976, is now professor of neurology at the University of California, San Francisco, and chief of neurology at the San Francisco VA Medical Center. He writes that he "has recently shown that the induction of the c-fos protooncogene can be used to map activated neurons in the brain and that induction of the heat shock genes can be used to map injured neurons in the brain."

Dr. Maxine Singer, from 1956 to 1988 affiliated with both NIAMD and NCI, where she now is scientist emeritus, is president of the Carnegie Institution of Washington. She presented the NIA's fifth annual Florence Mahoney Lecture on Aging entitled "Jumping Genes and Their Potential for Genetic Damage" on Sept. 25.

Dr. Milton W. Skolaut, at the Clinical Center from 1952 to 1969, where he was director of the pharmacy and central supply, retired from the PHS in 1969 and became director of the department of pharmacy at Duke University Hospital in Durham, N.C. He retired from this position in 1987. Since then he and his wife Rheta have travelled extensively in Canada and the United States in a 37-foot motor home. In addition, he and his wife do short assignments for Project Hope and have been to many parts of the world. The next trip will take them to the Soviet Union in the area around the Aral Sea.



Dr. William S. Sly, who was a clinical associate at NIH from 1959 to 1963 working in the laboratories of Drs. Marshall Nirenberg and Earl Stadtman, is now Alice A. Doisy professor and chairman of the Edward A. Doisy department of biochemistry and molecular biology at St. Louis University School of Medicine. He recently received one of two \$40,000 Senior Laureate Awards from the Passano Foundation. Sly was "honored for his discovery of the pathway by which lysosomal enzymes are targeted to their specific location within lysosomes. He found cellular receptors that bind a sugar molecule on the surface of these enzymes and direct the enzymes to lysosomes. This work has broad relevance to the study of intracellular transport and human enzyme storage diseases."

Dr. Solomon H. Snyder, who worked with his "mentor" Dr. Julius Axelrod in the Laboratory of Clinical Science, NIMH, from 1963 to 1965, and who is now director of the department of neuroscience, Johns Hopkins School of Medicine, has won the largest monetary prize

in American science—the \$331,000 second annual Bower Award in science. The award, which is the result of a \$7.5 million bequest by Henry Bower, a Philadelphia chemical manufacturer, is administered by the Franklin Institute. He was cited for his work on how drugs affect the brain and their relationship to understanding addiction. He was instrumental in the discovery of enkephalins and opiate receptors in the brain.

Dr. Leo Stolbach, who was a clinical associate and a senior investigator at NCI in endocrinology from 1960 to 1963, writes: "As of 11/1/91 I will be assuming the position of chief of medical oncology at St. Vincent Hospital in Worcester, MA. It is a large teaching hospital affiliated with University of Massachusetts School of Medicine. I am looking forward to the opportunity of combining clinical care, clinical research, teaching and application of behavioral medicine techniques to patients with cancer."

Elaine Hamilton Vreenegoor, retired from DRS' Medical Arts and Photography Branch, where she worked from 1959 to 1989, writes that she is now serving as president of the board of directors, Maryland Federation of Art. Its goals are to encourage the promotion, exhibition and the appreciation of the visual arts, all media, in the state of Maryland and surrounding metropolitan area.

Dr. John H. Weisburger, who was at NCI in the Etiology Division, 1949-1972, and who is now a senior member emeritus at the American Health Foundation in Valhalla, NY, writes that he is organizing a teaching seminar on mechanisms in nutrition and cancer to be held in Venice, Italy, on Oct. 12-14, 1992.

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Dr. Dawn Butler Willis, a chemist in the Kidney and Electrolyte Metabolism Laboratory, 1957-58, writes, "This early experience in research inspired me to earn a Ph.D. degree in microbiology from the University of Tennessee in 1968. I then spent 20 years as a faculty member in the department of virology and molecular biology of St. Jude Children's Research Hospital in Memphis, pausing to take a sabbatical in 1981 as an American Cancer Society-Eleanor Roosevelt International Cancer research fellow in Strasbourg, France. In 1988, after the move of its national headquarters from New York City to Atlanta, I joined the American Cancer Society as a scientific program director."

Dr. Bernhard Witkop completed 40 years at NIH in 1990 and received a gold pin and a certificate from NIDDK. In 1991 he arranged the Fourth Paul Ehrlich

Lecture by Isabella Karle on "Imaging in Theory and Praxis: From Paul Ehrlich Receptors to Modern Roentgen Analysis."

Dr. James B. Wyngaarden, former NIH director and now foreign secretary at the National Academy of Sciences, received the 1991 George M. Kobler Medal from the Association of American Physicians at its annual meeting in Seattle in May. In the presentation speech he was lauded for "a remarkable array of achievements in all phases of academic and public life — in research, in education, in science policy, in writing and editing, and in major administrative leadership locally at Duke, nationally at NIH, and now internationally."

Dr. K. Lemone Yielding, a senior investigator for NIAMD, 1955-64, is now vice president for research and dean of the graduate school at the University of Texas Medical Branch in Galveston.

President's Page

What is Happening with The Alumni Association?

Glaxo Inc., the Sandoz Research Institute and the Upjohn Co. have responded to our request for financial assistance to make possible the continuation of *NIHAA Update*. We are deeply grateful to these three pharmaceutical firms for their generosity and we want to thank Drs. Charles Sanders, Robert Levy, and Theodore Cooper who helped make this possible. We are completely dependent on the dues paid by our members, and donations such as these. Our organization receives no funds from the NIH.

If you have not yet responded to the dues renewal notices that were recently sent out, please do so because dues are an important part of our income. We are now looking at ways to expand our membership, and to build a bigger financial base to support an increasing variety of activities. We would welcome any suggestions you might have about ways that you feel the NIHAA can be of better service to its members, the NIH, and the biomedical community in general.

The NIHAA had a good turnout at the reception that initiated the NIH Alumni Day and Research Festival '91 activities. It was an opportunity to see many friends from the past. We were fortunate in having three former NIH directors with us: Drs. James Shannon, Robert Marston, and Robert Stone. We want to thank the National Heart, Lung, and Blood Institute, which was the lead institute for this year's festivities, for the outstanding scientific and social events that it planned. NHLBI alumnus and Nobel laureate Dr. Joseph L. Goldstein of the University of Texas was the winner of this year's NIH Distinguished Alumnus Award. Special thanks go to Dr. Claude Lenfant, director of NHLBI, and his staff, especially to Dr. Edward Korn and Gerri Wolffe, who



Dr. James A. Shannon (l) talks with Dr. and Mrs. Joe R. Held at the Sept. 22 reception. Held is president of the NIH Alumni Association.

worked efficiently to organize many of the activities. We are looking forward to participating in next year's Alumni Day and Research Festival.

On Nov. 23, we will be celebrating the 50th anniversary of NIH's move to Bethesda. On Jan. 28, 1992, we shall be having an annual meeting, when additional members will be elected to the board of directors. In case of inclement weather, Feb. 4, 1992, will be an alternate date. Cal Baldwin is chairing our nominations committee. Anyone having suggestion for candidates can send them to the NIHAA office.

We recently changed our bylaws because of current conflict-of-interest rules involving government employees. Our thanks go to Drs. Edwin D. Becker, Philip S. Chen, Sheldon G. Cohen, Kenneth A. Collins, Michael Fordis, Irwin J. Kopin, Abner L. Notkins, Lois A. Salzman, Alan N. Schechter, and Federico Welsch, who had been serving as board members until the change in our bylaws precluded the participation of current NIH employees. Their service was valuable during the association's formative period. Our new bylaws now permit the organization of an associate members council, which will be made up entirely of current NIH employees. I hope these former board members will be among the associate members on this new council so the NIHAA can continue to receive their input.

NIHAA Update continues to be our principal means of communication to our membership. In preparing this publication Harriet Greenwald, the editor, depends on the advice of the newsletter editorial advisory committee. We thank Bobbi P. Bennett, Dr. Sheldon G. Cohen, Dr. Peter G. Condliffe, and Storm Whaley, who have just completed terms of service and welcome Dr. Jerome G. Green, Colleen Henrichsen, Dr. John L. Parascandola, Dr. Philip Schambra, Elizabeth H. Singer, and Dr. Richard G. Wyatt to the committee.

Attention

NIHAA wants to hear from its members. Please type or print your note for a future issue and mail it to *Update*.

Name

Home address

Home phone

News, include dates/position at NIH and photo if possible.

Suggestions for newsletter

Suggestions for NIHAA

Science Research Updates

GENE-ENGINEERED BACTERIAL TOXIN KILLS AIDS-INFECTED CELLS IN LABORATORY TESTS

A bacterial toxin genetically engineered to attack HIV-infected cells successfully killed target cells in culture, leaving healthy cells unharmed, suggesting that similarly altered toxins could have therapeutic potential for AIDS.

The human immunodeficiency virus (HIV), which causes AIDS, attacks certain cells critical to proper functioning of the immune system. The cells studied in this research were T cells, which are the primary target of HIV, and monocytes, which serve as reservoirs of infection and allow the virus to spread throughout the body. Infection by HIV activates the cells, triggering them to produce a molecule on their surface called the interleukin-2 (IL-2) receptor. (Interleukins are substances secreted by immune cells to help regulate immune responses.) The receptor is not found on unactivated cells.

In order to take advantage of this difference between HIV-infected and uninfected cells, the investigators exposed the cells to diphtheria toxin altered so that it attacks only cells bearing the IL-2 receptor. The resulting toxin selectively destroyed HIV-infected T cells and monocytes in culture while sparing those that did not have the receptor.

Drs. Robert Finberg of the Dana-Farber Cancer Institute in Boston, Sharon Wahl of NIDR, and Jean Nichols of Seragen Inc. in Hopkinton, Mass., led this research effort. The investigators believe the IL-2 toxin may have potential as a treatment for individuals infected with HIV. Similarly engineered toxins have shown promising antitumor effects in

cases of leukemia and lymphoma in which other treatments had lost effectiveness. While it would not be a cure for AIDS, treatment could decrease the number of infected cells, thereby reducing viral replication and the total amount of virus in the body.

GENE FOR FRAGILE X SYNDROME PINPOINTED BY SCIENTISTS

Scientists supported by NCHGR and NICHD have ended a long search for the gene that is responsible for fragile X syndrome, the most common inherited form of mental retardation. The discovery is a major step towards explaining what scientists have called the "bizarre" genetics of fragile X.

One of the key mysteries of fragile X inheritance is why its pattern of occurrence in carriers of the mutation is not consistent with that of other X-linked genetic disorders. Twenty percent of male carriers of the mutation, for example, do not develop the disorder, but they can transmit it through their daughters (some of whom may also be affected) to their grandchildren.

The identification of the gene—designated FMR-1—will provide scientists with a means to answer questions that remain about fragile X syndrome inheritance, such as whether genetic imprinting—a process in which gene expression is influenced by the sex of the parent from whom the genes are inherited—may play a role in fragile X syndrome. FMR-1 is adjacent to a region that is altered in people with fragile X syndrome in a manner consistent with gene imprinting.

Studying the gene may also shed light on the abnormality that gives the syndrome its name: a thread-like, and therefore fragile, stretch in the X chromosome. A fragment of this X chromosome has been found to vary in length among

people affected with the disease. A striking feature of FMR-1 is that the protein it encodes contains a stretch in which the same amino acid is repeated 30 times, a possible clue to these puzzling features.

FMR-1 is expressed in the brain, but the function of its protein is as yet unknown. Knowledge of the gene and its protein will not only help scientists understand the disease, but should also provide an important diagnostic tool and eventually lead to ways to treat the syndrome. Grantees Dr. Stephen T. Warren at Emory University in Atlanta and Dr. Thomas Caskey at the Howard Hughes Medical Institute, Baylor College of Medicine, Houston, reported these findings with colleagues at these centers and scientists in Rotterdam and Leiden, The Netherlands.

BRAIN RESEARCHERS PREVENT ALZHEIMER'S-LIKE LESIONS IN ANIMALS

Researchers have used a new live animal model of Alzheimer's disease to show that excessive accumulation of the brain protein beta amyloid is a cause, not a consequence, of the nerve degeneration seen in the disease and that another protein can protect against the beta amyloid-caused degeneration.

Abnormal accumulations of beta amyloid in the brain are a hallmark of Alzheimer's disease (AD), but scientists have been unable to determine whether amyloid deposits result from nerve degeneration, or cause loss of function. NIA- and NINDS-supported scientists Dr. Bruce Yankner, Children's Hospital, Boston, and Dr. Neil Kowall, Massachusetts General Hospital, and colleagues, injected beta amyloid into the brains of live rats. The protein caused nerve cell death similar to that seen in patients with AD.

In an attempt to thwart the destructive

effects of beta amyloid on brain cells. Yankner's team injected substance P directly into the brain, and in another study, into the abdomen, before injecting beta amyloid into the brain. Substance P is one of a family of neuropeptides called tachykinins, natural brain proteins similar in structure to a portion of beta amyloid. Substance P, which is significantly depleted in the cerebral cortex of patients with AD, successfully inhibited nerve cell death in the rats when injected either into the brain or systemically within 24 hours after injection of beta amyloid.

The development of an animal model that can mimic the degenerative changes characteristic of AD is an invaluable tool for learning more about this disease and for developing and testing potential treatments, such as substance P, that may one day prevent or reverse the functional loss caused by AD in human patients.

TREATING SYSTOLIC HYPERTENSION IN OLDER PEOPLE CAN PREVENT STROKES

A 5-year multicenter clinical trial has demonstrated that drug treatment for isolated systolic hypertension (ISH), a common condition in older people, can help prevent strokes.

Isolated systolic hypertension means that systolic pressure, which represents blood pressure during heart contraction and is the upper number in the blood pressure ratio, is over 160, while diastolic blood pressure, which represents pressure when the heart is filling with blood, is normal (less than 90). While previous studies had demonstrated the value of treatment for diastolic hypertension in reducing the risk of stroke and heart disease, none had examined whether treatment for ISH could have similar benefits.

The Systolic Hypertension in the Elderly Program (SHEP), funded by NIA and NHLBI, was designed to test whether drug treatment to lower elevated systolic blood pressure can reduce the number of strokes, heart attacks, and deaths from cardiovascular disease in people age 60 and older. Half of 4,736 persons enrolled in the study received treatment for their hypertension, while half received a placebo.

The patients received the lowest doses of antihypertensive drugs necessary to achieve a target systolic pressure, beginning with the diuretic chlorthalidone, and progressing in a stepped care program to a beta adrenergic blocking drug if necessary, always using the lowest effective dose. This regimen reduced the incidence

of total stroke by 36 percent, and reduced the incidence of coronary heart disease by 27 percent. According to the researchers, the treatment regimen is uncomplicated, inexpensive and causes very few side effects.

More than 3 million Americans over age 60 have elevated systolic hypertension. SHEP participants who were treated had an 11 percent lower rate of hospital and nursing home admissions than those who were not treated. Nationwide, treating ISH in older people could potentially prevent up to 73,000 hospital and nursing home admissions a year.

This material was compiled by Charlotte Armstrong, Office of Communications, OD.



NHLBI director Dr. Claude Lenfant (l) and then-NIA director Dr. T. Franklin Williams fielded questions at a press conference at NIH announcing the SHEP findings.

Town Meeting (continued from p. 1)

Healy spent the first half-hour of the well-received program placing the intramural side of NIH, which accounts for about 10-15 percent of NIH's nearly \$9 billion budget, in social, political and economic context.

In brief, she said biomedical science in America is "an endangered enterprise" attracting fewer students and fewer dollars as its workforce ages and becomes less robust. Those youngsters who do elect careers in biomedical science tend to have so many debts that clinical medicine, not basic research, attracts them most. Lastly, America's edge in technology is being ceded to foreign nations, and with it is going a decided economic advantage.

"NIH must become a national priority," she said, "and the intramural program must be the flagship of biomedical research in the United States. It can and must be better. It can and must be happier."

Facing a panel that included Healy and most of her top staff, Dr. Enrico Cabib of NIDDK opened the questioning with a lament that was repeated by others: Why are there so many administrative hurdles placed in front of intramural scientists these days? And further, why is the nature of those obstacles so belittling to scientists?

"We are treated like naughty children who are suspected of telling lies," he complained. "I have been here for 24 years and everything still looks nice on the surface, the roses still bloom. But NIH is showing signs of rot at the core. My question is, What are you planning to do?"

The packed hall erupted in loud and sustained applause.

"We share your frustration," said Healy, who explained that rules are part of the price we pay for working in the federal government. "Procurement regulations are imposed on us externally," she



Healy makes a point at the session, during which she endorsed a graduate university at NIH and a possible new NIH campus in exurban Maryland.

said. "You can't shoot the messenger—these people (administrators) have to obey the law. I'd have to be blind, deaf and dumb not to know that procurement is a big problem on this campus. And I know that your frustration titer is high."

Healy said that big agencies with big budgets draw big attention from Congress. "Once you break the billion-dollar barrier, there is extraordinary scrutiny of every penny you spend," she said. DELPRO (NIH's automated procurement system) needs to be more efficient, Healy acknowledged, adding that she will relentlessly "see what we can do to come up with solutions. Some problems can be changed only by changes in the law. I don't want to see 2,000 scientists being led away from here in handcuffs."

Before entertaining the second question, Healy quipped, "Let's get the complaints on the table, although don't applaud every one."

She warned against NIH'ers projecting themselves as privileged people caught up in personal hassles and red tape. "The public is not impressed by relieving federal employees of their personal difficulties. The real stakes are the health of all Americans."

Healy asked Jack Mahoney, NIH associate director for administration, to follow up her answer to Cabib. "There is no challenge to the integrity of our scientists intended in these regulations," he assured, adding that NIH's Division of Procurement—the locus of many procurement hardships—is currently undergoing review and improvement.

Dr. Joost Oppenheim of NCI, who spent 20 years on campus before taking a job at the Frederick Cancer Research and Development Center, brought up two issues: crowded conditions in laboratories force scientists "to sacrifice comfort for the opportunity to work here," and satellite outposts (he labeled Frederick, Md., "Siberia") of NIH preclude the close interaction of potential colleagues to a point that is "really very damaging."

"That brings up a strategic question," answered Healy. "Should the intramural program grow or stay the same? In my view, a no-growth scenario is a declining-quality scenario. It would result in doing yesterday's, instead of today's, science."

"It would be tragic if we closed down the intramural program," she said, "because it is the jewel in the crown of NIH."

She picked three areas where intramural NIH is poised to take off: structural biology, the human genome project, and gene therapy.

How to accommodate a booming intramural program? "The site plan of the campus is being revisited," she reported. "We haven't done that in about 20 years. Norm Mansfield (NIH associate director for research services) is looking into the plan, and is overseeing renovation of the Clinical Center and construction of the COB (Consolidated Office Bldg., planned for some 3,000 workers currently in rental space, to be built at the south end of campus near NLM by the late 1990's). We really don't have any room left on the campus to grow. So we

are moving toward the point of considering—just considering mind you, not planning—a substantial campus to be known as ‘NIH North’ and this (the Bethesda campus) would be ‘NIH South.’ The north campus would not necessarily be a clone of NIH, but would be a supercritical mass of facilities. If we plan it well, everyone will want to be there.”

NCI scientist James Mulshine posed the next question: “Is PHS too large to deal with the specific (hiring) needs of NIH?” New recruits face a hostile hiring system, he said, one that restricts their opportunities to earn bonus money.

Healy answered, “I’ve read briefing books on NIH from here to the front door and I confess I flunk when it comes to understanding the complicated personnel system at NIH. You’ve got Civil Service, Commissioned Corps, SES, and now SBRS. It’s a mind-bender.” She referred the question to NIH personnel chief Stephen Benowitz, but offered, “An ideal NIH bill would simplify personnel regulations here.”

Dr. Stephen Epstein of NHLBI said that, in his 30 years at NIH, there has been an “overwhelming” increase in administrative burdens. Furthermore, many administrators lack the gumption to push the bounds of their authority when it comes to meeting scientists’ needs, he said. “We need an aggressive interpretation of the rules—one such as a good lawyer would give you—that would result in helping scientists, not in making administrators’ lives easier.”

Healy again offered sympathy, explaining that NIH has but one lawyer to deal with such questions. Using a medical analogy, she said that NIH’s attorney “has to be the cardiologist, neurosurgeon, and diagnostic radiologist, all rolled into one. A top priority is expanding our legal expertise,” she said. “NIH is now in the big-time, and we need a more solid corporate/legal base. We have to provide better legal information to our family members.”

NIMH’s Dr. Jacqueline Crawley decried both the careworn and unappealing surroundings facing potential recruits in many laboratories and the lag time in hiring foreign postdoctoral scientists at NIH.

Healy agreed, “The infrastructure here seems to be at the bottom of the food chain. We need to work hard to improve it.” She also mentioned the possibility of a loan-forgiveness program such as the one in place for AIDS researchers at NIAID as an incentive for postdocs to come to NIH.

Crawley’s observations drew two more comments: Dr. Philip S. Chen, Jr., NIH associate director for intramural affairs, said there are ways to speed the paperwork associated with hiring foreign postdocs, of whom there are many more than U.S. postdocs at NIH, and Dr. Charles McCarthy, director of NIH’s Office for Protection from Research Risks, acknowledged both that surroundings are, in many cases, poor, and that regulations governing research are “unnecessarily complex and need simplification.”

Discussion moderator Dr. Carl Kupfer, who in addition to heading NEI is also acting NIH deputy director for intramural research, read a handwritten query: “Why does NIH permit the need for AAALAC (American Association for the Accreditation of Laboratory Animal Care) accreditation to result in delays of up to 1-2 years in other renovation projects?”

“You can’t overestimate the need for AAALAC accreditation,” said Healy. “It was a shock to me when I first came here to learn that NIH’s intramural program is not AAALAC-accredited. That’s like not having adequate fire protection.”

Norm Mansfield said that, by the end of October, NIH will be ready for AAALAC’s inspection, but that not all work orders were halted by that job’s precedence. “We have handled 100,000 trouble and preventive maintenance calls, 6,000 work orders have been processed

(continued on p. 20)



Joining Healy on the panel were (from l) Dr. Charles McCarthy, director of the Office for Protection from Research Risks; HHS lawyer Gloria Frank; CC acting director Dr. Saul Rosen; Dr. Philip S. Chen, Jr., NIH associate director for intramural affairs; Dr. Jay Moskowitz, NIH associate director for science policy and legislation; and Jack Mahoney, NIH associate director for administration. Not visible are Norman Mansfield, NIH associate director for research services, Dr. John W. Diggs, NIH deputy director for extramural research, and NIH’s attorney Robert Lanman.

(continued from p. 19)

and completed, and 450-500 big contracts have been let for major renovation to buildings.

"In the last year, NIH has gotten more money for facilities than ever in its history," he reported. "The problem is, things have been let go for 20 years—jobs that should have been done.

"It is not widely recognized that the utility systems to labs are past their prime. We face the potential of catastrophic failure in some of these systems. NIH needs a couple of billion dollars to fix up this campus. Satellite facilities are needed because we're running out of room. There's not much space left for new construction."

Margaret Jensvold of NIMH accused NIH of "destroying lives and careers" by fighting sexual discrimination and harassment lawsuits brought against it "to the hilt" in the courts while simultaneously appearing to endorse publicly advances in women's health and research. "NIH's behavior in court makes those sweet words hypocritical and divisive," she said.

Healy emphasized, "All of us on this panel find such harassment and discrimination repugnant." The director knew of five such cases in recent history—three were settled, she said, and the other two are being adjudicated. Confirming those figures was Diane Armstrong, director of NIH's Division of Equal Opportunity. "Dr. Healy published policy guidelines on sexual harassment and sex discrimination shortly after her arrival at NIH," Armstrong said. "There is no place for discrimination at NIH."

NIMH's Jack Simpson, who identified himself as one of the few people to come from private industry into government, asked the panel why NIH training funds could not be used by an employee specifically for obtaining an advanced degree in a work-related field; Benowitz replied

that it is up to an ICD's discretion to pay for such work—there is no legal bar on obtaining a government-funded degree.

One question that everyone knew would arise was finally popped by NIDDK's Dr. Simeon Taylor, who posed it in perhaps its least challenging form: "The parking problem bothers all of us at NIH. It's not a minor problem, though it does sound trivial. I'm almost embarrassed to bring it up, but it could have a major impact on the quality of life here. A solution would be of major symbolic value, and could encourage us a lot."

Said Healy, "My good friend Carl Kupfer warned me that if I wanted to come out of this meeting alive, I'd better do something about parking." Within the coming months, 650 more spaces will be added to campus parking, she said. Parking is the Montgomery County executive's biggest NIH-related priority, she added; the county's "good neighbor" rule specifies one space for every two employees here as a way of minimizing local auto traffic.

"Only about 5 percent of NIH'ers use

Metro," she said, urging that those for whom it is convenient use public transportation. Healy also said it is now legal for NIH to subsidize in some way the admittedly high cost of Metro fares.

Dr. David Fitzgerald of NCI prefaced his question with an endorsement of town meetings: "They should be held every year during the week before Research Festival." He then asked why travel arrangements by federal scientists, particularly to foreign countries, take so much time and effort.

"Foreign travel is never going to be made easy," forecasted Healy. "There is extraordinary scrutiny—it's one of those lightning rods. Look what happened in Florence (Italy, site of last summer's international AIDS conference)—it became a major congressional explosion."

Healy said travel rules within NIH could be streamlined and suggested that scientists try to get the sponsoring institution to pay for travel and lodging. Lastly she advised Fitzgerald, "You're not alone (in being scrutinized). Look what happened to poor Mr. Sununu."



Audience members were invited to address Healy and her OD staff from microphones located in the aisles. More than a dozen intramural scientists asked questions.

A question arose about making tenure-track positions in the intramural program more open and competitive. Answered Kupfer, "We could do a much better job of stressing the advantages of the intramural program (to attract top candidates). The Office of Education is putting a prospectus in order to attract the very best people. We have a good case to make."



NEI director Dr. Carl Kupfer, who is also acting NIH deputy director for intramural research, moderated the discussion and posed questions submitted to him from the audience.

Dr. Barry Richmond of NIMH recounted "the agony of dealing with procurement people. If you want to make a big purchase, you almost have to don battle garb. There must be a way to make complex procurements smoother."

Having dealt with a version of this question earlier, Healy said she perceives a "cultural phenomenon at NIH—the administrators are seen as adversaries of the scientists. I can tell you that is not the mindset of Bldg. 1. Give (the administrators) a grain of sympathy. You say we're not service-oriented. I say it is a high priority for us and is becoming a higher priority. Jack Mahoney is making it an emphasis."

At this point, Healy reassured the scientists that top OD staff have spent much of the past month working on Office of Government Ethics regulations affecting, among other things, NIH'ers' ability to earn outside income. HHS ethics lawyer Gloria Frank stated, "There will be changes from the current policy. Right now is a time of intense scrutiny."

Dr. Robert Adelstein of NHLBI closed the session with a call for future town meetings, then inquired about the desirability of establishing formal post-graduate education at NIH "as a way of

attracting investigators and increasing our own scientific knowledge."

"That is a readily accomplishable vision for NIH," answered Healy. "We could have a magnificent graduate university. It would enliven the intellectual atmosphere and make a marvelous contribution to this country. I feel it's almost an abrogation of our social responsibility not to have it. The time is right to think about it and do it."

"This is a very lofty note on which to close this first of what I hope will be very many town meetings," she said.

Healy Disburses First Shannon Awards

NIH director Dr. Bernadine Healy has announced the names of the first recipients of NIH's "James A. Shannon Director's Awards," which will provide nearly \$30 million in new biomedical research support.

"This program is very important to me because it will help maintain research momentum and raise investigator morale," she said. "These awards were made for applications that fell within the required 'margin of excellence' but just missed funding. The proposals deemed especially innovative and creative were given preference. The Shannon awards will assure that hundreds of excellent scientists will receive NIH support who otherwise would not."

The Shannon Awards were named to honor the physician who directed NIH during the period 1955-1968, when NIH emerged as a world leader in biomedical research.

When Healy became NIH director in April 1991, her first major new funding initiative was the Shannon awards.

The first recipients are 310 scientists at 146 research institutions throughout the United States. The recipients did not

specifically apply for these awards, but were nominated by NIH program staff people, with the concurrence of the institute directors, from among applicants whose priority scores for new and competing NIH grants were just above the cutoff figures.

Many of the recipients are young scientists for whom this is their first NIH research support. It is expected that these promising biomedical investigators will use these funds to narrow their research focus into areas suitable for exploration in future NIH grant applications.

For other recipients, the Shannon awards will provide "bridge" support to sustain a proven productive laboratory that is maintaining its expertise between NIH grants. Still other scientists—most of whom have already worked under NIH research grants—will be using their Shannon awards to branch into exciting new biomedical areas where they can probe promising hypotheses.

Most of the awards (289 out of 310) are for \$100,000 to cover research and indirect costs over a 2-year period. Nineteen awards are for \$50,000 for research and indirect costs for 12 months, while two smaller awards will provide partial support for about 2 years.

Women's Health Research Comes of Age

About 120 scientists, clinicians, ethicists, lawyers and women's health advocates brainstormed to set a research agenda for women's health for the next decade at a workshop Sept. 4-6 in Hunt Valley, Md., north of Baltimore. "Our goal," said Dr. Ruth Kirschstein, in her opening remarks, "is to address the biomedical research needs of America's women."

Kirschstein, director of NIGMS, has served since September 1990 as acting NIH associate director for research on women's health. The Office of Research on Women's Health (ORWH), which she headed, organized the workshop called "Opportunities for Research on Women's Health." The office also held a 2-day public meeting in June to solicit input on the research agenda from organizations involved in women's health issues. More than 90 statements were submitted at this meeting.

Workshop participants expressed enthusiasm that NIH had held such a meeting within the first year after the creation of the ORWH. Rep. Pat Schroeder (D-Colo.) commented that she was gratified at the progress that already has been made. Many advocacy group representatives also praised NIH for its commitment to—and actions on behalf of—women's health research.

In the keynote address, Dr. Bernadine Healy, NIH director, acknowledged "an awakening in women's health." Referring to past criticisms of NIH for not including women in some important clinical studies, she said, "We have owned up to these faults and made important corrections very quickly." She urged everybody to put these lapses "into perspective and move forward."

Healy asked for a "unified" agenda for women's health research. "Setting the priorities will be the most difficult, as

well as the most important, aspect," she said, "because it will help us allocate resources and guide and encourage researchers."

A 10-member task force on opportunities for research on women's health will submit its recommendations to NIH by mid-December 1991. It must evaluate and prioritize a 2-inch thick set of draft recommendations from ten panels of experts who met during the workshop.

Because women's health issues are complex and need to be addressed on many levels, the meeting took a two-part approach. On the first day, the panels explored women's health in terms of life span: from birth to adolescence, young adulthood, the perimenopausal years, and the mature years. On day two the perspective shifted to crosscutting science: reproductive biology, early developmental biology, aging processes, cardiovascular diseases, malignancy, and immune function and infectious diseases.

A special panel met to examine issues related to the inclusion of women in research, which range from legal and ethical considerations to recruitment into and retention in clinical studies.

Discussions throughout the 3 days focused on many gender differences and women's health needs:

- While females have an advantage of longevity over males, many women live those extra years in states ranging from poor health to frailty to severe disability.

- Gaps in knowledge exist about physiological differences between males and females. These differences affect overall disease and gender-specific diseases across all age groups.

- Little is known about the benefits and risks of estrogen replacement therapy, yet this information could be of vital importance to the health of women after menopause.

- Women bear a disproportionate burden of impact from sexually transmitted diseases and urinary tract infections. This is especially true of women between ages 15 and 40.

- At least 80 percent of sexually active women use or have used oral contraceptives. Yet the potentially great impact of their long-term use has never been carefully assessed.

- The rate of smoking in women soon will be higher than the rate in men. This threatens to raise lung cancer rates in women to epidemic proportions.

- Little is known about the impact of diseases on minority women. For example, black women have higher rates of obesity than white women. Yet national surveys show black women do not eat more fat, only more cholesterol, than white women.

- Addictions and depression take a tremendous toll on women from all segments of American society.

"As we move into the nineties women seem to be going both backward and forward in terms of health status," said Dr. Maureen Henderson, associate head of the Fred Hutchinson Cancer Research Center in Seattle. One reason, she suggested, is that women born in the 1940's, 50's, 60's and 70's have very different sociomedical backgrounds from one another and are unlikely to have the same future health profiles. "We need to understand cohort experiences," she concluded.

Henderson showed a slide of 18 growth factors and hormones that influence the growth and metabolism of breast cells. Yet, she said, only two—estrogens and progestins—have been studied in research on breast cancer, heart disease, and osteoporosis. "We must encourage risky and innovative research on less easy-to-measure hormones and their influence on women's specific diseases and health in general," she urged.

Many discussions during the workshop focused on the need to look at a woman's overall physical and mental health throughout her lifespan. "NIH needs to stress behavioral aspects of health and disease to a greater extent," said Healy during her keynote address. "I predict that in 3 or 4 years, it will be commonplace at NIH for scientists and science administrators to think of behavioral research within the spectrum of biomedical research."

The workshop was chaired by Dr. Mary Lake Polan of Stanford University's department of obstetrics and gynecology and Dr. William Hazzard of Bowman Gray School of Medicine.

"The women of America deserve this research agenda," Kirschstein told workshop attendees. The agenda will be carried out under the direction of Dr. Vivian W. Pinn, whom Healy has named as her choice for permanent head of ORWH.

Pinn To Direct ORWH

Dr. Vivian W. Pinn has been selected as the first director of NIH's Office of Research on Women's Health (ORWH).

She comes to NIH from Howard University College of Medicine where, since 1982, she has been professor and chairman of the department of pathology. She is the third woman and the first African American woman to chair an academic pathology department in the United States. She is also a recent past president of the National Medical Association.

Pinn is internationally recognized for her research in renal pathology. Her medical interests include increasing opportunities for minorities in medical education, and improving access of minorities and women to health services. Recently, she led a project to increase screening for breast cancer and cervical cancer among minority and disadvantaged women, and to increase provider sensitivity and education concerning such screenings.

The ORWH was established in September 1990 to strengthen and enhance NIH's efforts to improve the prevention, diagnosis, and treatment of illnesses in women, and to enhance research related to diseases and conditions that affect women. The office helps establish NIH goals and policies for women's health issues and assures that all appropriate clinical trials include the participation of women. Dr. Ruth L. Kirschstein, who is also the director of the National Institute of General Medical Sciences, had been the NIH acting associate director for research on women's health.



Dr. Vivian Pinn has been appointed to head the new Office of Research on Women's Health.

Pinn earned her M.D. degree in 1967 at the University of Virginia School of Medicine, where she was the only African American and the only woman in her class. She completed a residency in pathology at Massachusetts General Hospital. Her bachelor of arts degree is from Wellesley College, and she was the valedictorian of her graduating class at Dunbar High School in Lynchburg, Va. She has received many distinguished awards in her field, is an active member of several professional organizations, and has authored or coauthored numerous medical journal articles.

New Rehabilitation Medicine Center Created

NIH's family has officially expanded: The agency's newest entity, the National Center for Medical Rehabilitation Research (NCMRR), established within the National Institute of Child Health and Human Development, was announced July 9.

The product of congressional legislation signed into law last November by President Bush, NCMRR will conduct and support research to develop techniques and devices for medical rehabilitation to improve the quality of life and increase the independence of the 35 million Americans with disabilities.

One of the center's priorities will be to support research leading to improved technologies and techniques to reactivate muscle, nerves and bodily functions impaired by injury, disease, disorder or birth defect, and to improve prosthetic devices.

NCMRR also has responsibility for supporting research training programs and for disseminating health information. It will eventually include an intramural component conducting both basic sciences research and clinical studies.

DHHS secretary Dr. Louis Sullivan, who announced creation of NCMRR, said, "The new center will conduct and support the work of engineers and scientists seeking to restore, replace and enhance the function of children and adults with physical disabilities."

The center is the fourth national center to join the 13 institutes, three divisions, Clinical Center, Fogarty International Center, and National Library of Medicine that constitute NIH.

A Closer Look at the NIH Office of Education

By Dr. Michael Fordis

The NIH, like so many other academic and research institutions, has seen a decline in the number of talented young physicians and scientists eager to enter its research training programs. In addition, fewer young people are choosing science as a career and the quality of science education in grades K to 12 is inadequate to meet the challenges of the future. Paradoxically, this diminished interest in biomedical research careers is occurring at a time of unparalleled scientific opportunity.

In response to this situation, NIH established the Office of Education a little over a year ago. In brief, its goals are to address the education, training, and recruitment of postdoctoral fellows and students. Educational programs at NIH are, therefore, not viewed in isolation but rather in the context of a continuum of educational experiences that are offered for those interested in biomedical science. These experiences are made available from the time they are young students until they are in need of specialized, postdoctoral training.

Early efforts of the office focused on the recruitment of postdoctoral fellows. Applications for the Clinical Associates Program, formerly known as the Medical Staff Fellowship Program, increased 2½ fold, and by July 1991, 95 percent of the clinical associate positions were filled. In addition, foreign physicians are now being attracted to NIH for clinical and basic research training through the NIH-International Medical Scholars Program. The number of Accrediting Council on Graduate Medical Education (ACGME) accredited programs at NIH doubled this year to a total of twelve with the addition of programs in critical care medicine, en-

docrinology and metabolism, hematology, infectious disease, medical oncology, and rheumatology. Opportunities for both M.D. and Ph.D. scientists are now clearly outlined in the *NIH Postdoctoral Research Fellowship Opportunities Catalog*, which includes descriptions of the training programs available at NIH and descriptions of the research focus of each of the intramural laboratories. The second edition will feature expanded laboratory descriptions as well as citations for each of the tenured scientists.

The Office of Education also has responsibility for overseeing several programs that for many years have been serving to attract to NIH future physicians early in their training. The Summer Research Fellowship Program enables medical students to spend the summer between their first and second year engaged in biomedical research at NIH. Third and fourth year students are able to participate in the Clinical Electives Program, which offers nineteen different

clinical educational experiences. Under development is the NIH Medical Elective Program for Clinical Residents, which will provide residents with firsthand knowledge of the advantages of subspecialty training at NIH.

Medical students were only a small part of the research force at NIH this past summer. A total of almost 700 high school, college, medical/dental, graduate students, and teachers participated in the summer research program. An important element of the program was a weekly seminar organized by the Office of Education and presented by an intramural scientist. Eleven speakers, including Dr. Anthony Fauci, Dr. Michael Gottesman, and Dr. Judith Rapoport, described recent advances at the frontiers of biomedical research. The Office of Education also organized an end-of-the-summer poster session featuring presentations by 122 students from 22 states and U.S. territories. This summer also saw the arrival of the second group of high school student and teacher interns. In collaboration with



Dr. Anthony Fauci, director of NIAID, answers questions from students following his presentation on AIDS at the Office of Education's Summer Seminar Series.

the Howard Hughes Medical Institute and the Montgomery County Public Schools, this program provides a full year of research experience in an intramural laboratory and formal instruction by Office of Education staff in developing a scientific presentation. Each of the students in the program is from an under-represented minority group; this program is designed to nurture their initial interest in the biomedical sciences. Additional efforts in the area of precollege science education are being launched by the Office of Education's newly established NIH Science Education Academy. Already operational is a NIH Speakers Bureau and the NIH Biomedical Research Preparatory School, a Saturday program developed with the Office of Minority Programs to train promising high school students in molecular biology so that they may be better prepared to apply for summer research positions at NIH. Soon to be in operation are NIH EDNET, an electronic bulletin board connecting NIH scientists with school teachers, a course to prepare NIH scientists for visits to the classroom, and a new summer research program for teachers and students preparing to become science teachers.

The Office of Education is committed to helping the intramural program to focus on a number of institutional problems that keep the intramural program at NIH from achieving its full potential. In addition, we have been able to mobilize NIH scientists to become mentors to students who need to be encouraged in their pursuit of a scientific career. These efforts speak to a renewed interest in educational matters at NIH, an attitude that can only help us to remain at the forefront of biomedical research training.

Dr. Fordis is director of the NIH Office of Education.

CALENDAR

NOVEMBER

The NIH Lecture will be Tuesday, Nov. 19, 1991, at 3 p.m. in Masur Auditorium, Bldg. 10. The speaker will be Dr. Irving L. Weissman, Howard Hughes Medical Institute investigator and professor of pathology and developmental biology at Stanford University School of Medicine. His topic is "Hematopoietic Stem Cells: Biological and Clinical Potentials."

The Kinyoun Lecture, sponsored by NIAID, will be Thursday, Nov. 21, 1991, at 4 p.m. in Lipsett Amphitheater, Bldg. 10. The speaker is Dr. Zanol A. Cohn. His topic is "Cell-Mediated Immunity—From Bench to Bedside."

On Tuesday, Nov. 26, 1991, from 8 a.m. to 4:30 p.m. in Masur Auditorium, Bldg. 10, there will be a 20th Anniversary Symposium on the National Cancer

Act entitled "Past Accomplishments/Future Goals."

On Wednesday, Nov. 27, 1991, the first Gorgas Memorial/Leon Jacobs Lecture will be presented by Dr. Leon Jacobs in Wilson Hall from 3 to 5 p.m. His topic will be "A History of NIH Parasitology: People and Perspectives."

NOVEMBER-DECEMBER

As part of a holiday fundraising effort for the Children's Inn at NIH, White Flint Mall and radio station WLTT-97.4 will be holding a promotion from Nov. 22 to Dec. 22, 1991, at the mall. If you would like to assist in this fundraising effort or would like additional information, contact Pam Keller at the Children's Inn, (301) 496-5672 or Randy Schools at the NIH R&W, (301) 496-6061.

For more information about various lectures and events at NIH, call (301) 496-1766. For information about NIHAA call (301) 530-0567.



Stealing the show at the first anniversary of the Children's Inn at NIH in July was Hydeia Broadbent (second from r), who sang a song she made up for guests including (from l) NIH director Dr. Bernadine Healy, congressional spouses Janet Waxman (foreground) and D. Chris Downey, and Albert D. Angel, president of the Merck Company Foundation.

New Labs for Seven Institutes

Bldg. 49 Enters Final Construction Phase, Completion Seen in 1992

By Rich McManus

The new Child Health and Neurosciences Building (Bldg. 49), due to be dedicated next fall under the name of its chief congressional sponsor, the late Rep. Silvio O. Conte, has entered its fourth and final construction phase right on schedule.

The eight-story laboratory and animal facility on the west side of the NIH campus will house research programs from NICHD, NIMH, NINDS, NIAAA, NEI, NIDR, and NIA.

"Progress has just been tremendous on this thing," said project officer Stephen R. Hagan of the Division of Engineering Services.

Ground was broken for the building in October 1988, when Conte visited the campus for what he called the proudest moment of his political career. Phase I—creation of the site foundation and utilities—began shortly thereafter, followed by phase II, the concrete superstructure, and phase III, mechanical systems and exterior.

The contract for phase IV, the fitting out of laboratory and office space, was recently awarded. This last phase will end in just over a year, said Hagan.

"Bldg. 49 is really two separate buildings," he said as he led a walking tour of the facility, now swarming with specialists working on their own discrete parts of the project. "The north side of the first five floors is for the animal facility and the south side contains laboratories and offices." The remaining three upper levels will be limited to labs and offices.

The design will provide state-of-the-art facilities for research in child health and the neurosciences. One guiding principle in the design has been to achieve AAALAC (American Association for the Accreditation of Laboratory Animal Care) approval, and to segregate animal

research and other activities, Hagan explained.

There are two separate loading docks at the rear of the building for animals and laboratory materials. Inside, four elevators serve the animal side—two for large animals, mainly primates, and the other two for such small animals as rats, mice and other rodents.

To enhance the psychological well-being of the animals, small windows have been built in many holding rooms. Anterooms are provided outside these rooms for maintenance and for minor procedures and record-keeping. Directly across the hallway are procedure rooms for animal experiments.

On the laboratory side, an 8-foot-wide utility corridor, which backs onto a

freight elevator, divides the labs, providing a delivery route, access to lab support rooms and giving easy access to ventilation shafts and other utilities to maintenance workers.

Visitors to Bldg. 49 will enter at a security desk, past which is a large, open staircase rising four floors through a glassed-in atrium. This central staircase, plus glassed-in fire stairs on each side of the building, provide "interaction spaces," where the "human primates" can enjoy some "psychological well-being" of their own.

The front of the building, which faces south, features conference rooms with solarium-type floor-to-ceiling windows on each of its five upper floors; these will be conference rooms for each of the insti-



The north side of what will be known as the Conte Bldg. is actually the rear of the building. The small windows on the first five floors admit the outside world to animal holding areas and were built for the animals' benefit.



The south side of Bldg. 49 will be the entrance to the facility, scheduled for completion in fall 1992.

tutes doing research in the building. Office space for the ICDs will occupy a 10-foot deep area of the building's front portion.

In front of the building are large concrete air shafts resembling silos. These house air intake equipment for the ventilation of 49 and are built off the ground to avoid contamination from car and delivery truck fumes.

To meet the parking demands of the estimated 500 or so workers who will occupy 49 and others in that area of the campus, a new multi-level parking garage is slated to be built just west of Bldg. 34. March 1993 is the target date for completion of the garage.

Another change planned in that corner of campus is construction of Bldg. 29B, an FDA facility to rise adjacent to Bldg. 29, said Hagan. Convent Dr. will be straightened out in the vicinity of Bldg. 36 to make room for the FDA addition, he noted.

NIH Notes for July— September 1991

HONORS AND AWARDS

Dr. Gilbert Ashwell, NIDDK investigator in the Laboratory of Biochemistry and Metabolism, was honored on Sept. 12 and 13 with a symposium on "The Chemistry and Biology of Carbohydrate-Protein Interactions" ... **Dr. Claudia Baquet**, associate director of NCI's Cancer Control Science Program, received from the Indian Health Service the Director's Special Award for "outstanding efforts in cancer prevention activities for American Indians and Alaskan Natives" ... **Dr. Peter Bennett**, chief of NIDDK's Phoenix Epidemiology and Clinical Research Branch, was given the Indian Health Service Director's Special Award for "outstanding efforts in the understanding and treatment of diabetes in American Indian and Alaskan Natives" ... **Gwendolyn Brooks**, NIAID equal employment opportunity officer, recently received an "Outstanding Service Award" from the National Council of Negro Women, Prince George's County, Md., chapter, during its 10th anniversary celebration. The council recognized Brooks for her voluntary support and outreach to young women in the community ... **Dr. Bruce Chabner**, director of NCI's Division of Cancer Treatment, was promoted to the rank of rear admiral in the PHS Commissioned Corps ... **Dr. Louis S. Diamond**, chief of the parasite growth and differentiation section in the Laboratory of Parasitic Diseases, NIAID, was honored by having a conference in India dedicated to him for his contributions to the study of *Entamoeba histolytica*, which have been of far-reaching significance, and for his "profound impact on amebiasis research in India" ... **Dr. Giovanni Di Chiro**, chief of the neuroimaging section of NINDS, was honored by the executive committee of the American Society of Neuroradiology when it dedicated its annual President's Lecture to him. The lecture was given by **Dr. Louis Sokoloff**, a world renowned neurochemist and physiologist with NIMH ... **Dr. Alfred Del Vecchio** has been awarded a 3-year American Cancer Society postdoctoral fellowship to continue work at NCI's Laboratory of Tumor Virus Biology. He will be working in research on human papillomaviruses to study genetic differences in the viruses that may cause infected cells to become cancerous ...

Dr. Susan Ellenberg, chief of the Biostatistics Research Branch in NIAID's Division of AIDS, has been elected to fellowship in the American Statistical Association "for exemplary and creative leadership in the development of sound statistical approaches to AIDS clinical trials, for important contributions to the planning and monitoring of multicenter clinical trials, and for service to the profession" ... **Dr. Leland Hartwell**, NIGMS grantee and professor of genetics at the University of Washington, received the 1991 V.D. Mattia Award from the Roche Institute of Molecular Biology for his contributions toward understanding the regulation of the eukaryotic cell cycle ... **Paul Jarosinski**, Clinical Center pharmacy specialist and coordinator of oncology, was recently named "Pharmacist of the Year" at the annual meeting of the United States Commissioned Officers in Atlanta. This award recognizes exceptional performance that exemplifies the most outstanding qualities of a pharmacist in USPHS ... **Dr. Robert Katz**, director of NIDDK's Metabolic Diseases Research Program, spoke on "NIDDK and Its Support of Rare Diseases" at the 10th anniversary conference of the United Leukodystrophy Foundation. He also chaired a scientific roundtable discussion to explore the possibilities for NIH-sponsored immunology research in the leukodystrophies ... **Dr. Harry Mahar** recently accepted an award on behalf of the Occupational Safety and Health Branch, Division of Safety, from the Maryland governor's committee on employment of people with disabilities at its annual conference and awards luncheon. The award was presented to the branch for its outstanding role in encouraging the employment of people with disabilities ... **Dr. Sidney McNairy**, director of the Research Centers in Minority Institutions Program, National Center for Research Resources, was the recipient of the 1991 Morehouse School of Medicine Award ... **Linda Nee**, a social science analyst at the NINDS Clinical Neuroscience Branch, has been honored for her outstanding contributions and achievements in medicine through research on Alzheimer's disease. She received a 75th Anniversary Commemorative Medal at the 10th annual Geneva Sayre Lecture delivered recently at Russell Sage College in Troy, N.Y. She is a graduate of Russell Sage College ... **Karen O'Steen**, director of NIH's Executive Secretariat, was honored by the Indian Health Service with the Director's Special Award, for "expert advice and counsel to the IHS as it reviewed the Executive Secretariat to improve the

(See NIH Notes p. 28)

NIH Notes (continued from p. 27)

agency's responsiveness to external authorities"... **Dr. Richard Rothman**, formerly of NIDDK's Laboratory of Medicinal Chemistry, was selected for the 1991 Joseph Cochran Young Investigator Award by the committee on problems of drug dependence for his contributions to opioid pharmacology research. He recently joined the Addiction Research Center of the National Institute on Drug Abuse ...



Dr. Earl Stadtman (r) receives applause when it was announced that he was the corecipient of the 1991 Welch Award in Chemistry.

Dr. Earl Reece Stadtman, chief of NHLBI's Laboratory of Biochemistry, has been named one of two winners of the 1991 Welch Foundation Award in Chemistry. He will share the \$250,000 prize with Dr. Edwin G. Krebs of the University of Washington at Seattle. Both men were cited for outstanding contributions in the field of enzyme chemistry.

APPOINTMENTS AND PERSONNEL CHANGES

Linda Beach is the new coordinator of the Fogarty International Center's volunteer services office. She works with visiting scientists who come to FIC from all over the world, helping them adjust to metropolitan D.C. She also supervises and trains volunteers to help at the office ... **Dr. Jaswant Singh Bhargava**, associate professor of cell and molecular biology, Meharry Medical College, has been appointed scientific review administrator of the pathology A study section in DRG's Referral and Review Branch. The section is one of 82 within the division. It consists of 20 members from the scientific community who conduct the initial scientific merit review of applications relating to stud-

ies in pathology, pathobiology, and the biochemistry of disease ... **Dr. Wendy Baldwin**, chief of the Demographic and Behavioral Sciences Branch, NICHD, has been named deputy director of NICHD. In this job, she shares with the NICHD director the responsibility for overall planning, direction, and evaluation of NICHD activities, and she will also oversee the direction of the institute's extramural research and scientific review programs ... **Dr. Geoffrey P. Cheung**, former assistant director for operations and program procedures in NIAID's Division of Extramural Activities and acting chief of the NIAID Research Manpower Development Staff office, has joined NIGMS as a program administrator in the Minority Biomedical Research Support program ... **Dr. Gene D. Cohen** has been appointed acting director of the National Institute on Aging. In addition to serving as deputy director of the institute since 1988, he is executive secretary for both the DHHS council on Alzheimer's disease and the congressionally appointed advisory panel on Alzheimer's disease. Before joining NIA he had served as first chief of the Center on Aging of the National Institute of Mental Health ... **Dr. John C. Dalton** has been named the first director of the Division of Extramural Activities, NIDCD. He is responsible for planning and executing extramural activities and for overseeing grants management, peer review activities and national advisory council functions. He comes to NIDCD from a similar position at NINDS ... **Kimberly B. Hooven** was recently appointed chief administrative officer for DCRT. Before assuming her new position, she was the senior budget analyst at NIDDK, where she served the intramural division. She was recently an intern for the DHHS Women's Management Training Initiative ... **Robert N. Gray**, formerly deputy director and vice president of the Washington Board of Trade, has been selected as the executive director of the Children's Inn at NIH ... **Dr. Ernest W. Johnson**, director of the Diabetes, Endocrinology and Metabolic Diseases Division, NIDDK, left to become the director of grants and contracts at Penn State University College of Medicine in Hershey. He was also appointed professor of cellular and molecular physiology in the college of medicine at Penn State ... **Dr. Barnett S. Kramer**, senior investigator with the Navy Medical Oncology Branch and a professor at the Uniformed Services University of the Health Sciences, has been appointed associate director of the Early Detection and Community Oncology Pro-

gram in the Division of Cancer Prevention and Control. He will oversee the early detection studies, the community oncology and rehabilitation programs, the cancer prevention fellowship, and an intramural program in biomarkers and prevention research ... **Dr. John J. McGowan**, associate director of the Basic Research and Development Program of NIAID's Division of Acquired Immunodeficiency Syndrome, has been appointed director of NIAID's Division of Extramural Activities ... **Dr. Donald I. McRee**, a health scientist administrator at NIEHS, has been named chief of the Scientific Review Branch in NIEHS's Division of Extramural Research and Training. This branch is responsible for reviewing the scientific and technical merit of all research and development contract proposals and grant applications including those for program projects, research centers, special research grants, training grants, and applications received in response to requests for applications. He joined NIEHS in 1969 ... **Dr. Lawrence J. Proffitt, Jr.**, was recently appointed deputy director of NIAID's Division of Allergy, Immunology, and Transplantation, where he continues to serve as chief of the division's Asthma and Allergy Branch ... **Dr. Matilda White Riley**, NIA associate director for the Behavioral and Social Research Program, has been named senior social scientist at NIA. She joins a small number of other senior researchers who have received the congressionally established senior scientist position, and is the first social scientist at NIH to receive this appointment. A sociologist and pioneer in innovative approaches to the study of aging and society, she plans to focus her research on social structures and structural changes as they affect quality of life, health and functioning among older people ... **Dr. Robert Strausberg** has been named to head NCHGR's Technology Development Program. He has had experience both in academia and in the biotechnology industry. He comes to NIH from Genex, a biotechnology firm in Gaithersburg. He was senior director of research responsible for DNA sequencing, DNA synthesis, cDNA and genomic cloning, and the expression of foreign genes in yeast and E. coli ... **Dr. Percy Thomas** has been named the new director of the Extramural Associates Program at NIH. He came to NIH in May 1990 to do an organizational study for the Division of Financial Management ... **Dr. Judith L. Vaitukaitis** has been appointed deputy director for extramural research resources, NCHRR. She has served as director of the General Clinical Re-

search Centers Program, NCRR, since 1986 and as acting deputy director for extramural research resources since February 1990 ...

Dr. T. Franklin Williams, director of the National Institute on Aging since 1983, has resigned his position to return to appointments at the University of Rochester School of Medicine and Dentistry and the Monroe Community Hospital. By returning to academic life he hopes "to accelerate the integration of new knowledge about aging into the medical school curriculum and into the practice of medicine."

RETIREMENTS

Dr. Artrice Bader, a program administrator in the Cellular and Molecular Basis of Disease (CMBD) Program, NIGMS, has retired after 32 years at NIH. She began her NIH career in 1957 as a biologist in NHI. In 1961, she transferred to NCI. She took time out to return to graduate school and in 1966 became the first Ph.D. recipient from Georgetown University's biology department. She returned to NCI in 1966 and in 1978 transferred to the CMBD program where she administered a portfolio of grants in cell organization, motility and division. During retirement, she plans to enjoy her family while working as a consultant in science management and review ... **Dr. Jeanne Brand** of NLM's Extramural Programs Division recently retired from government service. She came to NLM in 1967 and was chief of the EP's Publications and Translation Division before being named chief of EP's International Programs Branch in 1970. In her position at NLM she administered the only peer-reviewed extramural publications support program at NIH. She has also been very interested in the history of medicine and she most recently received the NIH Director's Award for her outstanding leadership in promoting scholarship in the history of medicine through the NLM Grant Program ... **Eleanor M. Casey** recently retired from the Committee Management Office, OD. She came to NIH in 1978 and spent her entire career in the CMO. One of her responsibilities was to prepare *NIH Advisory Committees*, a popular listing of all NIH chartered committees with their memberships, for biannual publication. One member described the book as the "Who's Who" of the scientific community ... **Dr. Charles R. Smart**, chief of NCI's Early Detection Branch from its beginnings in 1986, has retired and returned to Salt Lake City. He

has devoted his professional life to dealing with cancer both as a surgeon and as an expert in the field of cancer registration and screening. In his retirement, he will continue his efforts to control cancer.

DEATHS

The Rev. Kenneth A. Bastin, 36, chief of the Clinical Center's department of spiritual ministry for the past 2 years, died in a traffic accident in Washington, D.C., on Aug. 1. In addition to his pastoral duties at NIH, where he held regular worship services in the chapel on the hospital's 14th floor and visited patients, he was a member of the CC ethics committee and supervised students in the department's clinical pastoral education program ... **Dr. David P. Byar**, 53, who was chief of the Biometry Branch, Division of Cancer Prevention and Control, NCI, died on Aug. 8. His primary interest was the design of cancer prevention and screening studies and assessment of epidemiologic evidence. He joined the institute in 1966 ...

Harold Carter, a technician at NIH, died on Sept. 7. He was employed at the Clinical Center as a darkroom technician in the department of radiology. He had worked at NIH for 29 years in many capacities and in 1976 had joined the radiology department ...

Dr. Michele Filling-Katz, 36, a genetics researcher in the Laboratory of Clinical Studies, NIAAA, was slain in Burtonsville on Aug. 11. She was murdered at home with her husband Dr. Norman Katz, chief of pediatric ophthalmology at Walter Reed Army Medical Center. Dr. Katz's son has been arrested and charged in the shooting death of the couple ... **Dr. Roger W. Gilliatt**, 69, chief of the electromyography section at NINDS, died of cancer Aug. 19 at his home in Washington. He was an authority on peripheral nerve problems and peripheral neuropathy. He retired in 1987 as the chair of clinical neurology at the University of London's neurology institute and came to work at NIH ... **Dr. Morris M. Graff**, 81, died on July 28. He came to work at NIH in 1956 in the study section on endocrinology at NCI. He retired in 1985 and travelled extensively and pursued artistic endeavors such as photography and sculpture ... **Dr. Clarence Louis Hébert**, 79, retired chief of the Clinical Center anesthesiology department, died of cancer Sept. 5 at his home in Venice, Fla. He was anesthesiology chief at NIH from 1953 until he retired in 1975. He was a medical officer in the PHS

for 25 years. He moved to Venice last year from Bethesda ... **Jetta R. Houghten**, 67, a pianist and piano teacher who also had worked as a grants management specialist at NIH, died of cancer July 30 at her home in Bethesda. She worked at NIH from 1975 to 1983 ... **Thomas C. Leffingwell**, 69, a retired administrative and budget officer of the Fogarty International Center, NIH, died of septicemia July 16 at Suburban Hospital. He joined the staff at NIH in the mid-1950's. He retired in 1983 ... **Dr. Robert Meyer Leonard**, 68, retired administrator at NIH, died of cancer and Parkinson's disease Sept. 23 at his home in Silver Spring. He retired in 1985 after 21 years with the Division of Research Grants' Scientific Review Branch. He formerly was dean of the department of pharmacy at George Washington University ... **Dr. Robert C. Moore**, 49, a pharmacist with NCI's Pharmaceutical Resources Branch, Developmental Therapeutics Program, died July 31 of a heart attack. He had joined NCI early this year from the Health Care Financing Administration where he helped implement the Medicare Catastrophic Coverage Act passed in 1988 ... **John M. Proctor**, 54, executive director of the National Institute on Drug Abuse from 1972 until retiring in 1987, died June 30 of a heart attack. From 1963 to 1968 he was a personnel management specialist at NHLBI. He was an administrative officer for NIMH at St. Elizabeths Hospital in Washington from 1968 to 1972. In the early 1970's, he played a key role in the reorganization of NIDA. He was responsible for the planning, coordination and conduct of management affairs, including financial matters, contracts, personnel and general support administration ... **Dr. Efraim Racker**, 78, a leading researcher on energy storage in living cells and its implications for cancer, died Sept. 9 of a stroke at University Hospital in Syracuse. He had been a member of a cancer advisory board to NCI and chairman of the biochemistry study section at NIH ... **Frances S. Seal**, 87, the widow of Dr. John R. Seal, deputy director of NIAID, died Sept. 17, at Bethesda Naval Hospital after a long illness ... **Christine Marie Smith**, 23, a systems analyst with NIH, died on Aug. 23 in an automobile accident in Manassas, Va. ... **Dr. Randall G. Sprague**, 84, a senior consultant in medicine at the Mayo Clinic and an authority in metabolic and endocrine disease, died Dec. 28, 1990. From 1947 to 1951, he was a member of the metabolism and endocrinology study section at NIH.

NIH Retrospectives



Autumn 1951

Dr. Pearce Bailey, formerly chief of the Veterans Administration's section on neurology, has been named first director of the National Institute of Neurological Diseases and Blindness ... October saw 121 communities in the United States with water fluoridation programs in effect—up 71 from last October's figure. The Division of Dental Public Health, PHS, reported that an additional 138 communities have approved a fluoridation program ... A vitamin of the B family has been isolated in pure form by NIAMD scientists.



Autumn 1961

A study issued by the Personnel Management Branch, OAM, reflected the following statistics about NIH: from 1951-61 the number of full-time employees at NIH has increased from 2,361 to 8,783. The breakdown is NCI, 1,168; NIMH, 818; NIAID, 59; NHI, 576; NIAMD, 545; NINDB, 510; and NIDR, 181. The Divisions' employee totals were reported as: DRS, 1,037; DRG, 467; DBS, 222; and DGMS, 112. The 1,211 members of the scientific and professional staff hold 1,276 doctorate degrees in more than 25 disciplines. Medicine is represented by 566, the biosciences by 351, the physical sciences by 77, and psychology by 60. A variety of other branches of knowledge including, among others, dentistry, veterinary medicine, mathematics, and pub-

lic health, are represented by 157 doctorate degrees; and 65 Doctors of Medicine are also holders of doctorate degrees ... An assemblage of special guests, including Boisfuiet Jones, Special Assistant to the DHEW Secretary for Health and Medical Affairs, and PHS Surgeon General Luther L. Terry, joined with NIH staff and other personnel for the official opening of the new 11-story NIH office structure, designated as Building 31.



Autumn 1971

Prince and Princess Hitachi of Japan visited NIH. Hitachi, the second son of the Emperor of Japan, is a special investigator at the Japanese Foundation for Cancer Research in Tokyo ... New parking regulations have been in force since April

1, but employees and visitors continue to park illegally at the rate of 40 to 60 tickets issued per day ... Forty prominent biomedical scientists with expertise in laboratory and clinical research will participate in the initial discussion phase of the National Cancer Plan.

The NIH Record

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National
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Health

Autumn 1981

The National Institute of Environmental Health Sciences announced a reorganization to include more toxicological testing through the National Toxicology Program. Toxicological research activities of the Food and Drug Administration and the Centers for Disease Control's National Institute of Occupational Safety and Health will be consolidated at NIEHS.



Marjorie Melton, a parasitologist who was in the Laboratory of Parasitic Diseases, NIAID, identified the two women in our last mystery photo as Ann Jowett and Irene Kahler. Above is another photo about which National Library of Medicine prints and photographs curator Lucinda Keister needs information. It is a photo of the flagpole in front of Bldg. 1 which is being painted. It was taken between 1940 and 1947. Does anyone remember the date and the name of the employee? Please send information to Update.

Two NIH Grantees Claim 1991 Lasker Awards

Two NIH grantees are 1991 recipients of the Albert Lasker Medical Research Award, the prize widely thought of as a precursor to the Nobel Prize. Dr. Yuet Wai Kan of the University of California, San Francisco, and Dr. Edward B. Lewis of the California Institute of Technology, both geneticists, were honored for their clinical and basic research, respectively.

First presented in 1946, the Lasker Awards recognize individuals who have made significant contributions in basic and clinical research in the diseases that are the main causes of death and disability. In the 45-year history of the awards, 49 Lasker honorees have later received the Nobel Prize. Lasker Award winners receive, in addition to a citation and an inscribed statuette, a \$15,000 honorarium.

Clinical research award recipient Kan, whose early training was supported by a fellowship from the then National Institute of Arthritis and Metabolic Diseases in 1970, has received grant money from NIDDK since August 1973. From 1974 to 1978, he served on NIH's sickle cell

disease advisory committee and in 1975, he received an NIH Research Career Development Award.

Over a 21-year period, NIH has supported Kan's work in abnormal hemoglobin synthesis, mechanism and detection research as well as his basic research in hematology and oncology. Kan developed the first and best methods for detecting abnormal hemoglobin for



Dr. Edward B. Lewis

Cooley's anemia and sickle cell anemia in the fetus and then in the umbilical cord.

The Louis K. Diamond professor of hematology at UCSF since 1983, Kan delivered the NIH Lecture in 1986 and was selected to receive an NIDDK MERIT (Method to Extend Research In Time) Award in 1987. He served on the advisory committee for the NIH hematology study section from 1980 to 1984 and on the NIH blood diseases and resources advisory committee from 1985 to 1989. Kan, whose work has implications for gene therapy for life-threatening diseases, has also received research support from NHLBI and NCI.

Lewis, who shares the 1991 Lasker basic research award with Dr. Christiane Nusslein-Volhard of Germany, is an NIGMS grantee. His work is involved in mapping a series of rearrangements

(which he called the "bithorax complex") in genes that control segmentation of the fruit fly (*Drosophila*) embryo. Gene complexes involved in genetic control, called homeobox genes, in fruit flies can provide understanding of human health problems because the human genome is also known to contain similar gene clusters. This work should shed light on gene clusters that seem to operate in a coordinated manner in specific times and places during development.

The Thomas Hunt Morgan professor of biology, emeritus, at CalTech, Lewis was elected to the National Academy of Sciences in 1968. He also received research support from NICHD.

The 24-member 1991 Lasker Awards jury of distinguished scientists and physicians included two NIH researchers—Dr. Thomas Waldmann, chief of NCI's Metabolism Branch, and Dr. James Watson, director of the National Center for Human Genome Research.

Kennedy Center Promotion Available to NIHAA

The NIH Alumni Association has been invited to join with the NIH R&W for a special program at the Kennedy Center. You will be given a glimpse of the work-a-day world of ballet with "The Corps de Ballet" program. You will get to enjoy pre-performance discussions with company artistic directors, choreographers, designers, and dancers. Our evenings are Jan. 29, 1992, from 6 to 7 p.m. with Pacific Northwest Ballet and with American Ballet Theatre on Apr. 4, 1992, from 6 to 7 p.m. Tickets for these programs are just \$5. Please call R&W at (301) 496-6061 for reservations or write to: Recreation and Welfare Association, National Institutes of Health, 9000 Wisconsin Ave., Bldg. 31, Rm. B1W30, Bethesda, MD 20892.



Dr. Yuet Wai Kan



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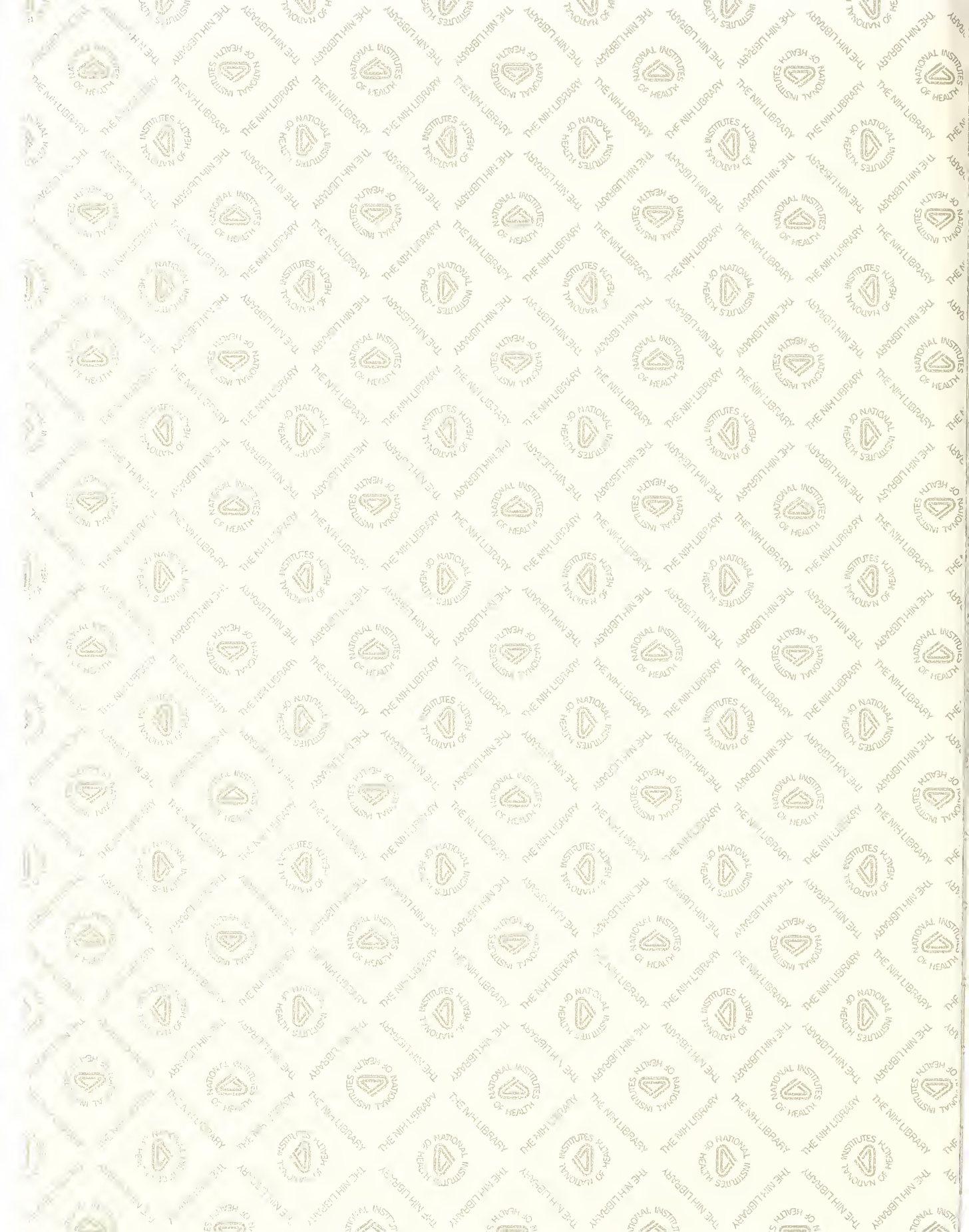
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